# ENERGY AND WATER DEVELOPMENT APPROPRIATIONS FOR 1987

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# HEARINGS

BEFORE A

SUBCOMMITTEE OF THE

COMMITTEE ON APPROPRIATIONS
HOUSE OF REPRESENTATIVES

NINETY-NINTH CONGRESS

SECOND SESSION

SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT

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# ENERGY AND WATER DEVELOPMENT APPROPRIATIONS FOR 1987

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THURSDAY, FEBRUARY 20, 1986.

## UNITED STATES ARMY CORPS OF ENGINEERS

## OHIO RIVER DIVISION

### WITNESSES

BRIG. GEN. PETER J. OFFRINGA, DIVISION ENGINEER
LOUIS R. LISTERMANN, CHIEF, PROGRAM DEVELOPMENT OFFICE
KENNETH D. HARACK, PROGRAM DEVELOPMENT OFFICE
RICHARD C. ARMSTRONG, CHIEF, ENGINEERING DIVISION
JIMMY F. BATES, CHIEF, PLANNING DIVISION

Mr. BEVILL. General, we are delighted to have you with us again. You may introduce those with you and proceed as you wish.

General OFFRINGA. Thank you very much, Mr. Chairnan.

Mr. Chairman and members of the Committee, I am pleased to be here today. With me, on my left, is Mr. Lou Listermann, who is my Chief of Program Development, and Mr. Richard Armstrong who is my Chief of Engineering. On my right is Mr. Ken Harack also of the Program Development Office, and Mr. Jim Bates, who is my Chief of Planning.

I would like to submit for the record my status report and give you a brief oral summary.

Mr. BEVILL. Without objection, so ordered.

### AREA OF RESPONSIBILITY

General OFFRINGA. My division is responsible for water resources development within the 204,000 square mile Ohio River Basin.

Mr. BEVILL. Beautiful area.

General OFFRINGA. An area which includes 25 million people, 69 Congressional districts, and portions of 14 States. The Ohio River navigation system is vital to the basin's status as a national agricultural, industrial and manufacturing area. The division, headquartered at Cincinnati, Ohio, has district offices in Pittsburgh, Pennsylvania; Huntington, West Virginia; Louisville, Kentucky; and Nashville, Tennessee.

### EXPENDITURES FISCAL YEARS 1982-86

Expenditures for the past four years and for our current year program are shown here. Our present estimate for fiscal year 1986 is $305 million. This is our fiscal year 1987 budget request. These items will be addressed in turn.

### GENERAL INVESTIGATIONS

The General Investigations program includes studies and the continuation of planning and engineering projects. The budget request will continue 14 feasibility studies and initiate a reconnaissance study of Station Camp Creek, Kentucky. Funds will also be used to intitiate planning and engineering for a local flood protection project at North Chillicothe, Ohio. Other planning and engineering studies for replacement of Locks and Dams 52 and 53 and for a local protection project on Holes Creek at West Carrollton, Ohio, will be continued under this appropriation. Our major effort will be planning and engineering for future navigation projects.

### OHIO RIVER TRAFFIC

We are pleased to report that traffic on the Ohio River navigation system is increasing after a mild decline in the early 1980s. With the improving economy, particularly in the lower portion of the Ohio Basin, we anticipate continued growth in traffic.

### WABASH RIVER NAVIGATION

In fiscal year 1986, we initiated a reconnaissance study to evaluate improving the Wabash River for commercial navigation. Investigations to be conducted include comprehensive commodity movement and rate studies to determine the level of traffic and the transportation savings that would accrue. Options to be investigated include various alignments, canal and lock sizes, and a termination point at either Mount Carmel or Terre Haute. Our reconnaissance study is scheduled for completion in fiscal year 1987.

### CUMBERLAND AND TENNESSEE RIVERS

We are continuing planning efforts on the Lower Cumberland and Tennessee Rivers. The connecting canal, above Barkley Lock on the Cumberland and Kentucky Lock on the Tennessee, makes these rivers alternate routes for navigation traffic between the upper parts of the two basins and the Ohio River. Traffic delays at the Kentucky Lock average between three to four hours per tow. Some tows wait up to 19 hours. These delays are increased when tows choose to wait for passage at Kentucky Lock rather than navigate the tight narrow bends on the Lower Cumberland River. Studies for improvements to the Lower Cubmerland River and capacity expansion at Kentucky Lock are scheduled for completion in fiscal year 1987.

### LOCKS AND DAMS 52 AND 53

Locks and Dams 52 and 53, opened to navigation in the late 1920s, form the gateway of the Ohio River system for traffic to and from the lower and upper Mississippi River. In 1984, 73.5 million tons of cargo moved past Locks and Dam 52, giving this facility the greatest tonnage at any navigation facility throughout the entire inland waterway system. By the year 2010, traffic demand at this structure will exceed capacity. During low water periods, when lockages are required, major delays occurred. This slide shows congestion in the upper pool. The condition of the dams also poses challenges to reliable navigation. We have reached the limits of reasonable rehabilitation. Our feasibility report recommends construction of a single navigable dam with twin 110-foot wide by 1,200-foot long locks to replace both Locks and Dams 52 and 53. This modernization project, to be located near Olmsted, Illinois, will provide dependable navigation and ensure adequate capacity for future traffic. Fiscal year 1987 funds will be used for continuation of planning and engineering of this vital replacement project.

### CONSTRUCTION, GENERAL

In fiscal year 1987, over $130 million will be used to continue construction of 10 projects, continue engineering and design and land acquisition for three projects and complete construction of two projects.

### LOCKS AND DAMS 7 AND 8, MONONGAHELA RIVER

Major problems at Monongahela River Locks and Dams 7 and 8 are age, operating condition and inadequate lock size. Both projects have served navigation traffic for over 60 years and are showing the wear and tear of this long period of use. The locks at these projects form a bottleneck on the Monongahela River. They are 56-feet wide by 360-feet long and are located between larger and more modern locks. Traffic growth is expected to make the economic impacts of these conditions even worse. The Chief of Engineers' report on Locks and Dams 7 and 8 recommends construction of two new facilities. The first would be a replacement structure for Lock and Dam 7 to be named Grays Landing. The second structure would be a new large lock chamber added to existing Dam 8. The expanded facility will be called Point Marion Lock and Dam. Each new lock chamber would be 84-feet wide by 720-feet long to meet the needs of projected traffic and be consistent with other Monongahela River locks.

### GALLIPOLIS LOCKS AND DAM

Use of the budgeted funds for construction of Gallipolis Locks and Dam on the Ohio River is contingent upon legislation increasing the fuel tax. This is in accordance with the agreement between the Administration and the Senate Majority Leadership. Under a provision of the 1985 Supplemental Appropriations Act, we are currently in the real estate acquisition phase.

### WINFIELD LOCKS AND DAM, WEST VIRGINIA

The small twin 56-foot wide by 360-foot long locks at Winfield Locks and Dam on the Kanawha River are no longer large enough to sufficiently handle modern tows. It is common for tows to be three times longer than these locks and to be delayed up to seven hours. With increased demand for the region's high quality coal and chemicals, we are projecting that traffic will clearly exceed the capacity of the existing facility by 1990. We are scheduled to complete the feasibility report for Winfield in fiscal year 1986, and anticipate recommending a new 110-foot wide by 800-foot long lock. Funds in the 1987 budget request will be used for continued engineering and design.

### STONEWALL JACKSON LAKE, WEST VIRGINIA

A $16 million contract for dam construction at Stonewall Jackson Lake in West Virginia was awarded in July 1983. We expect to complete the project in June 1989. The dam provided significant benefits during the West Virginia floods last November. The partially completed structure reduced the floodwaters by more than five feet, and saved Weston and other downsteam areas approximately $24 million in flood damages.

### SECTION 202 PROGRAM

Planning, design and construction of projects under Section 202 are well underway. Projects have been approved for Williamson and Matewan, West Virginia, and Pineville and Barbourville, Kentucky.

### WILLIAMSON, WEST VIRGINIA

At West Williamson, acquisition of real estate is underway and construction of the floodwall is scheduled to be initiated this July. Acquisition of real estate for the Central Business District flood protection project is also underway. Construction is scheduled to begin in January 1988.

Plans for the nonstructural measures have been completed and we are raising a number of homes above flood level in the project area.

### MATEWAN, WEST VIRGINIA

A plan for Matewan, West Virginia, has also been approved. A combination levee and floodwall will provide standard project flood protection for the Central Business District, preserving the viability of this area and providing for restoration of business activities. Nonstructural measures will provide April 1977 flood protection for other project areas. Detailed planning will be completed this year, and implementation of nonstructural measures could begin this fall.

### PINEVILLE, KENTUCKY

Construction of the joint Federal and State Flood Protection and Highway Project at Pineville, Kentucky, is underway and the relocated Pine Street Bridge is nearly complete. Construction of the levee and highway is proceeding with completion scheduled for June 1988.

### BARBOURVILLE, KENTUCKY

Construction of the Barbourville, Kentucky, high-flow diversion channel is ahead of schedule and will be completed next month. Engineering and design for the levee and wall modification to provide standard project flood protection is scheduled for completion this December.

### SOUTHWESTERN JEFFERSON COUNTY, KENTUCKY

The Southwestern Jefferson County, Kentucky, project consists of over 13 miles of earth levee and concrete floodwall and four pumping stations. Located immediately downstream from Louisville, the $57.5 million project is 66 percent complete.

### MILL CREEK, OHIO

The Mill Creek, Ohio, project continues on schedule at 24 percent complete. The $156 million project, which extends through a highly industrialized section of Cincinnati, consists of 18 miles of channel improvements, two miles of levees, three pumping plants, and modification of 51 bridges and utility crossings.

### BIG SOUTH FORK, KENTUCKY AND TENNESSEE

The Big South Fork National River and Recreation Area consists of approximately 105,000 acres. We are developing overlooks, river access sites, campgrounds, trails, access roads and administrative facilities. The Bandy Creek Recreation Site in Tennessee was completed in October 1985 and will be officially dedicated on 19 April 1986.

### MAJOR REHABILITATION PROGRAM

The budget includes funds for the continuation of rehabilitation work on Locks and Dam 53 and Montgomery Locks and Dam on the Ohio River, and the Muskingum Basin Project.

### MONTGOMERY LOCKS AND DAM

We are requesting $8.3 million to continue rehabilitation work on Montgomery Locks and Dam. These funds will be used for new lock gates and repairs to concrete, bulkheads, dam gates and other associated items.

### MUSKINGUM RIVER BASIN, OHIO

The 14 dams built between 1934 and 1938 in the Muskingum Basin have experienced downstream seepage problems. Other problems involve the settlement of dikes, low spots on the rim below the top of dam elevation, and potentially unstable dam slopes. Rehabilitation is presently 60 percent complete.

### OPERATION AND MAINTENANCE PROGRAM

The $145 million for the Operation and Maintenance Program is 48 percent of the total Ohio River Division budget.

### DASHIELDS LOCKS AND DAM

This request includes $3.2 million for continuing the rehabilitation of Dashields Locks and Dam on the upper Ohio River. Located between Emsworth and Montgomery Locks and Dams, this facility is deteriorating from age and heavy use. We estimate total rehabilitation will require $27 million with planned completion in December 1989.

### RECREATION

Our 119 lakes and navigation pools offer superb sources of recreation. Over 90 million people enjoyed recreational opportunities provided by our projects during Calendar Year 1985. An increase of 9.5 percent from the previous year.

### FLOOD DAMAGES PREVENTED

The Ohio River Basin contains 76 flood control reservoirs and 87 local flood protection projects. Built at a cost of $2.75 billion, these projects have prevented $8.3 billion in cumulative basin-wide flood damages—a return of over $3 for every dollar invested. In fiscal year 1985, flood damages prevented totaled $279 million. Thus far in fiscal year 1986, over $360 million in flood damages have been prevented. One significant example was our flood control project, Cecil M. Hardin Lake, shown here, as it reached a record pool level last December during flooding on the Wabash River. During Calendar Year 1985, this project alone prevented $15 million in flood damages.

### EMERGENCY OPERATIONS

Last year, as part of our Emergency Management Program, we performed emergency recovery work on 56 natural disasters in seven States. Varying in type and magnitude, they included floods, high winds, earth slides, tornadoes and oil and hazardous material spills.

### TORNADOES—OHIO AND PENNSYLVANIA

The tornadoes on 31 May that devastated 10 counties in Ohio and 15 in Pennsylvania resulted in 76 deaths, numerous injuries and major destruction of hundreds of homes and businesses.

### FLOODING—PENNSYLVANIA AND WEST VIRGINIA

Yet it was the remnants of Hurricane Juan that demanded our greatest commitment. This storm caused the greatest single disaster of the year. There was major flooding in four States producing floods of record on six major rivers. The rampaging waters caused 69 deaths, destroyed thousands of homes and businesses, damaged hundreds of roads, bridges and utilities, and created millions of cubic yards of debris. This disaster would have been even greater had not the Corps flood control projects prevented over $334 million in damages. My division played a lead role in the recovery from this catastrophe by removing nearly $5 million worth of debris in West Virginia alone.

We are committed to be leaders in customer care, and I will end my testimony by highlighting one aspect of this recovery that demonstrates the dedication, resourcefulness and care of the people who make up the Corps of Engineers. The waters that devastated

West Virginia swept down from the mountains through the north flowing Monongahela River and on into Pennsylvania.

### TYGART LAKE, PENNSYLVANIA

The Tygart Flood Control Lake reduced flood elevations on the Monongahela by five to 10 feet, depending on location, and prevented over $200 million in damages. Unfortunately, most of the runoff occurred in the three-quarters of the basin that remains uncontrolled. In spite of our efforts, the river stages leapt upward and residents of low-lying areas were quickly flooded out. The couple in this picture is shown standing on the foundation of their home, and their home can be viewed as the structure behind the tree in the distant background.

The rapidly rising river broke loose fleets of barges. Out of control, they swept downstream, striking and breaking loose still more barges. Many sank, creating dangerous obstacles throughout the navigation pools, and many smashed into our locks and dams. Particularly hard hit was Locks and Dam 2 near Pittsburgh, with four barges left sitting on the guide walls at grotesque angles blocking both chambers, and one barge sunk in the small chamber.

### MAXWELL LOCKS AND DAM

At Maxwell Locks and Dam 50 miles upstream, twisted and jumbled barges protruded through four of the five gate bays, preventing our closing the gates, and causing the loss of the navigation pool. River commerce was halted, hurting both towing companies and shippers. Millions of dollars in damages were recorded from damaged or sunken equipment, lost cargoes and other losses. A number of coal mines were closed until the river was reopened. Water supply for 50,000 citizens, directly dependent on the Maxwell Pool, was jeopardized. We provided assistance to the water companies using Maxwell Pool as they constructed floating intakes to adapt to the varying water stages. Our advance emergency planning with these customers paid off as they continued to provide uninterrupted water supply to the affected communities.

Corps and contractor fleets and equipment worked around the clock to reopen the locks and clear the channel. The fleets first had to get through Locks and Dam 2 in order to proceed up river to Maxwell. Cutting and lifting barges, with work slowed at times to remove accumulated debris, we made it through Lock 2 in 13 days, six days ahead of schedule.

At Maxwell, 18 barges were lodged on the structure. Only three were still floating and could be removed easily. Six remained wrapped around the piers, while others were lying at strange angles—some submerged, some partially submerged. Some were stacked on top of each other, and some on top of the lock walls. We carefully planned releases from our Tygart Lake to provide adequate water levels for movement of the 19 major pieces of equipment that made up the work fleet while maintaining sufficient pool depth for water supply.

Teamwork by the Corps, Coast Guard, and private contractors enabled the gate bays to be cleared of barges, the pool restored, and the locks opened to commercial traffic by 16 December. The barge removal operation was a difficult, time-consuming, high-risk operation completed without any injury or loss of life.

Although predictions for cleanup ranged up to six months, normal commerce was restored in just 44 days.

I am proud of my people and of their ready response to this disaster, a response which ensures the continued integrity of the national waterways system. We stand ready to provide continued dedicated performance, maintaining our commitment, to be leaders in customer care. Mr. Chairman, that concludes my presentation. I would be pleased to answer your questions.

Mr. **Bevill**. I have several questions I am going to ask you, but I am going to recognize Mr. Boner who has a plane to catch to his district in Tennessee very shortly. I will just say that was a very fine presentation, and the four locks and dams projects you are recommending here, I had the opportunity to personally visit each of them. I share your concern about them and the need for them.

[The statement of General Offringa follows:]

# Status Report on Civil Works Activities
# in the Ohio River Division
# Fiscal Year 1987
Brigadier General Peter J. Offringa, Division Engineer

Mr. Chairman and members of the Committee, I am Pete Offringa, Division Engineer for the Ohio River Division of the U.S. Army Corps of Engineers. It is a pleasure to appear again before your Committee to report on the status of work in our area.

## AREA OF RESPONSIBILITY

My division is responsible for water resources development within the 204,000 square-mile Ohio River Basin, an area which includes 25 million people, 69 Congressional districts, and portions of 14 states. The Ohio River navigation system is vital to the basin's status as a national agricultural, industrial and manufacturing area.

The division, headquartered at Cincinnati, Ohio, has district offices in Pittsburgh, Penn.; Huntington, W.Va.; Louisville, Ky.; and Nashville, Tenn.

This report covers expenditures for the past four years, our programmed expenditures for the current year and our Fiscal Year 1987 budget. We will look at the four major programs: General Investigations; Construction; Major Rehabilitation and Dam Safety Assurance; and Operation and Maintenance.

## EXPENDITURES FISCAL YEARS 1982-1986

Expenditures for the past four years and for our current year program are as follows:

| | |
|---|---|
| FY 82 | $374,450,000 |
| FY 83 | 337,809,000 |
| FY 84 | 287,940,000 |
| FY 85 | 315,700,000 |
| FY 86 | 305,000,000 (Est.) |

## FISCAL YEAR 1987 BUDGET

Our Fiscal Year 1987 budget request is detailed below. These items will be addressed in turn.

| | |
|---|---|
| General Investigations | $ 9,915,000 |
| Construction | 130,936,000 * |
| Rehabilitation & Dam Safety | 15,500,000 |
| Operation & Maintenance | 145,593,000 ** |
| TOTAL | $301,944,000 |

* Includes $3.5 million to be derived from the Inland Waterways Trust Fund.

**Includes $4.04 million to continue major rehabilitation of Dashields Locks and Dam and the Muskingum Basin project.

## GENERAL INVESTIGATIONS

The General Investigations program includes both studies and the continuation of planning and engineering studies. The budget request will be used to continue 14 feasibility studies and initiate a reconnaissance phase study of a potential multi-purpose reservoir on Station Camp Creek, Ky., within the Kentucky River Basin. Funds will also be used to initiate continuation of planning and engineering for a local flood protection project at North Chillicothe, Ohio. Other planning and engineering studies for replacement of Locks and Dams 52 and 53 and for a local protection project on Holes Creek at West Carrollton, Ohio, will be continued under this appropriation. Our major effort will be planning and engineering for future navigation projects.

| | Start | Cont. | |
|---|---|---|---|
| Surveys | 1 | 14 | $7,915,000 |
| Continuation of Planning & Engineering | 1 | 2 | 2,000,000 |
| TOTAL | | | $9,915,000 |

### Ohio River Navigation System

We are pleased to report that traffic on the Ohio River navigation system is increasing after a mild decline in the early 1980's. With the improving economy, particularly in the lower portion of the Ohio Basin, we anticipate continued growth in traffic.

### Wabash River Navigation

In Fiscal Year 1986, we initiated a reconnaissance study to evaluate improving the Wabash River for commercial navigation. The Wabash is the second largest tributary to the Ohio River, and over 40 counties in the states of Illinois and Indiana would benefit from navigation improvements. This region is rich in resources. Coal reserves approach 60 billion tons, and corn and soybean acreages total 16 and 13 million acres, respectively.

Investigations to be conducted include comprehensive commodity movement and rate studies to determine the level of traffic and the transportation savings that would accrue. Options to be investigated include various alignments, canal and lock sizes, and a termination point at either Mount Carmel or Terre Haute. Our reconnaissance study is scheduled for completion in Fiscal Year 1987.

### Lower Cumberland and Tennessee Rivers

We are continuing planning efforts on the lower Cumberland and Tennessee Rivers. The connecting canal, above Barkley Lock on the Cumberland and Kentucky Lock on the Tennessee, makes these rivers alternate routes for navigation traffic between the upper parts of the two basins and the Ohio

River. In 1984, Kentucky and Barkley locks moved a total of 29 million tons. Economic growth with anticipated new traffic is expected to increase this figure to over 60 million tons by the end of the century.

Ten narrow, tight bends on the lower Cumberland River below Barkley Lock make navigation extremely difficult for larger tows, and many operators coming down the Cumberland River choose the canal to the Tennessee River and use Kentucky Lock. Consequently, this lock has averaged delays of three to four hours per tow with some tows waiting up to 19 hours. Studies for modifying the bends on the lower Cumberland and/or capacity expansion at Kentucky Lock are scheduled for completion in Fiscal Year 1987.

## Other Navigation Study Areas

Feasibility planning to evaluate improvements at other navigation projects is in the early stages. Studies for improvement or modernization of Emsworth, Dashields, and Montgomery locks and dams on the upper Ohio River and Locks and Dams 2 through 4 on the Monongahela River will be completed in Fiscal Years 1988 and 1989, respectively. A similar study is underway for McAlpine Locks and Dam at Louisville. With strong increases in traffic on the lower Ohio River, we anticipate that congestion at McAlpine will lead to growing delays and the need for increased capacity. This study is scheduled for completion in Fiscal Year 1988.

## Locks and Dams 52 and 53

Another general investigation activity within the navigation program is the engineering and design of a replacement for Locks and Dams 52 and 53 on the lower Ohio River. Last October, the Board of Engineers for Rivers and Harbors approved the report for replacement of these projects and we initiated continued planning and engineering during the current fiscal year.

Locks and Dams 52 and 53, opened to navigation in the late 1920's, form the gateway of the Ohio River system for traffic to and from the lower and upper Mississippi River. In 1984, 73.5 million tons of cargo moved past Locks and Dam 52, giving this facility the greatest tonnage at any navigation facility throughout the inland waterway system. Predictions indicate that, by the year 2010, traffic demand at this structure will be exceed capacity.

Because both these structures have navigable passes, in 1985 low water conditions required lockages for only 132 days at Locks and Dam 52 and 19 days at Locks and Dam 53. During these lockage periods, tows at these two projects were delayed nearly 30,000 hours at a cost of $12 million to shippers and waterway operators. The condition of the dams also poses challenges to reliable navigation. We have virtually reached the limits of feasible rehabilitation. Deterioration of the structures and projected traffic growth in the region require a replacement project.

Our feasibility report recommends construction of a single navigable dam with twin 110-foot-wide by 1200-foot-long locks to replace both Locks and Dams 52 and 53. This modernization project, to be located near Olmsted, Ill., will provide dependable navigation and ensure adequate capacity for future traffic. Fiscal Year 1987 funds will be used for continuation of planning and engineering of this vital replacement project.

### Local Flood Protection Projects

This year, reports will be completed recommending flood protection at four locations: Scioto River, West Columbus, Ohio; Bartons and Sinking Creeks, Lebanon, Tenn.; Mill Creek, Nashville, Tenn.; and Guyandotte River, Mullens, W.Va. In addition, we will initiate planning and engineering efforts at Holes Creek at West Carrollton, Ohio, near Dayton, and complete similar efforts on the Hocking River at Logan and Nelsonville, and on Pleasant Run at Fairfield, Ohio. In Fiscal Year 1987, a flood protection project at Moraine, Ohio, will be recommended. Fiscal Year 1987 funds will be used to continue investigation of flood problems at 11 communities, and to initiate planning and engineering activities for the local protection project at North Chillicothe, Ohio.

## CONSTRUCTION

In Fiscal Year 1987, $130.936 million will be used to continue construction of 10 projects, continue engineering and design and land acquisition for three projects and complete scheduled construction of two projects.

| | Projects | |
|---|---|---|
| Navigation | 5 | $ 10,636,000 * |
| Flood Control | 9 | 111,300,000 |
| National Recreation Area | 1 | 9,000,000 |
| TOTAL | | $130,936,000 |

* Includes $3.5 million to be derived from the Inland Waterways Trust Fund.

### Locks and Dams 7 and 8, Monongahela River

Major problems at Monongahela River Locks and Dams 7 and 8 are age, operating condition and inadequate locks size. Both projects have served navigation traffic for over sixty years and are showing the wear and tear of this long period of use.

The locks at these projects form a bottleneck on the Monongahela River. They are 56-feet wide by 360-feet long and are located between larger and more modern locks--an 84-foot-wide by 600-foot-long lock upstream at Morgantown Lock and Dam and twin 84-foot-wide by 720-foot-long locks downstream at Maxwell Locks and Dam. Traffic growth is expected to make the economic impacts of these conditions even worse.

The Chief of Engineers' report on Locks and Dams 7 and 8 recommends construction of two new facilities. The first would be a replacement structure for Lock and Dam 7 to be named Grays Landing. The second structure would be a new, larger lock chamber added to existing Dam 8. The expanded facility will be called Point Marion Lock and Dam. Each new lock chamber would be 84-feet wide by 720-feet long to meet the needs of projected traffic and be consistent with other recently completed Monongahela River locks.

We have completed the General Design Memorandum for Grays Landing Lock and Dam, and during Fiscal Year 1986, and will initiate the detailed design of the project features. In Fiscal Year 1987, we are scheduled to complete the General Design Memorandum for Point Marion Lock and initiate the detailed design.

## Gallipolis Locks and Dam, Ohio River

Obligation and expenditure of the budgeted funds for construction of Gallipolis Locks and Dam on the Ohio River are contingent upon legislation increasing the amount of revenue derived from taxes imposed on fuels used by vessels engaged in commercial waterway transportation in accordance with the agreement between the Administration and the Senate Majority Leadership. Under a provision of the 1985 Supplemental Appropriations Act, we received authority to acquire real estate for the modernization of Gallipolis in January 1986 and have initiated this effort. We expect to award a construction contract for the lock in December 1987.

## Winfield Locks and Dam, Kanawha River

The inadequacy of Winfield Locks and Dam on the Kanawha River is an example of the pressure that is being placed on our navigation system by economic growth and technological changes in the towing industry. The small twin 56-foot-wide by 360-foot-long locks at Winfield are no longer large enough to efficiently handle modern tows. It is common for tows to be three times longer than these locks and to be delayed up to seven hours.

With increased demand for the region's high quality coal and chemicals, we are projecting that traffic demand will clearly exceed the capacity of the existing facility by 1990. Expanded capacity must be provided or shippers will face increasingly costly delays. We are scheduled to complete our feasibility report for Winfield in Fiscal Year 1986, and we anticipate recommending a new 110-foot-wide by 800-foot-long lock adjacent to the project. Funds in the 1987 budget request for engineering and design will be used to initiate general design activities such as model tests and geotechnical investigations for the new lock.

## Stonewall Jackson Lake, West Virginia

A $16 million contract for dam construction at Stonewall Jackson Lake in West Virginia was awarded in July 1983. The project is now 68 percent complete and is expected to be completed in June 1989.

The dam provided significant benefits during the West Virginia floods last November. The partially completed structure reduced the floodwaters by more than five feet and saved Weston and other downstream areas approximately $24 million in flood damages.

### Yatesville Lake, Kentucky

The $3 million contract for construction of the outlet tunnel and stilling basin at Yatesville Lake in Kentucky is essentially complete. A contract for construction of the remainder of the dam and outlet works is scheduled for award in March 1986.

### Section 202

Planning, design and construction of projects under Section 202 are well underway. Projects have been approved for Williamson and Matewan, W.Va.; and Pineville and Barbourville, Ky.

### Williamson, West Virginia

The pump station at West Williamson is nearing completion. Acquisition of real estate is well underway and construction of the floodwall is scheduled to be initiated this July. Project relocations will also begin this summer. Construction will continue in Fiscal Year 1987 and is scheduled for completion in September 1990.

Acquisition of real estate for the Central Business District flood protection project is also underway, as is engineering and design of the floodwall and pumping stations. Construction is scheduled to begin in January 1988 with completion in June 1992.

The budget request of $8.3 million will be used in the Williamson area to continue real estate acquisition and construction of major project features.

Plans for the nonstructural measures have been completed. We are raising a number of homes above flood level in the project area and voluntary evacuation of floodplain residents should begin this spring. Utility relocations for the Valley View resettlement site are scheduled to begin this year and the site should be available for occupancy in the spring of 1988. Funding for nonstructural implementation will continue from the $21 million in nonstructural funds appropriated by the Urgent Supplemental Appropriations Act for Fiscal Year 1984.

### Matewan, West Virginia

The approved plan for Matewan, W.Va., provides for a mixture of structural and nonstructural measures. A combination levee/floodwall will provide Standard Project Flood protection for the Central Business District in a manner that will preserve the viability of this area and provide for restoration of business activities. Nonstructural measures will provide April 1977 flood protection for other project areas. Detailed planning will be completed this year and implementation of nonstructural measures could begin this fall. Our budget request provides $700,000 for continuation of engineering and design for structural project features. Implementation of the nonstructural plan during Fiscal Year 1987 will be funded from the previously appropriated $21 million.

### Pineville, Kentucky

Construction of the joint federal/state flood protection and highway project at Pineville, Ky., is well underway and the relocated Pine Street Bridge is nearly complete. Construction of the levee/highway is proceeding with completion scheduled for June 1988. This year's budget request of $11.05 million will be used to continue real estate acquisition and construction of major project features. In addition, an early action component of the nonstructural plan has been approved and implementation will begin this year.

### Barbourville, Kentucky

Construction of the Barbourville, Ky., high-flow diversion channel is well ahead of schedule and should be completed next month. Engineering and design for the levee and wall modification to provide Standard Project Flood level of protection is scheduled for completion this December. The budget request contains $300,000 for completion of engineering and design for the levee wall. We expect to complete our report on the nonstructural component this spring.

### Other 202 Studies

Work is progressing on the planning of other 202 studies. The Harlan, Ky., report was submitted to Headquarters USACE for approval at the end of January 1986 and the South Williamson, Ky., report is nearly complete. Work is progressing on reports at Kermit, W.Va.; Grundy, Va.; and other project locations. The budget contains $2.15 million for these other detailed studies.

### Local Flood Protection Projects

At Evansville, Ind., contracts for three pumping plants and a levee and floodwall are scheduled for award in Fiscal Year 1987. Remaining construction features are scheduled through Fiscal Year 1993.

The Southwestern Jefferson County, Ky., project consists of over 13 miles of earth levee and concrete floodwall and four pumping stations. Located immediately downstream from Louisville, the $57.5 million project is 66 percent complete.

The Mill Creek, Ohio, project continues on schedule at 24 percent complete. The $156 million project, which extends through a highly-industrialized section of Cincinnati, consists of 18 miles of channel improvements, two miles of levees, three pumping plants and modification of 51 bridges and utility crossings.

### Big South Fork National River and Recreation Area, Kentucky and Tennessee

The Big South Fork National River and Recreation Area, the nation's newest national park, lies in the rugged terrain of the Cumberland Plateau in Kentucky and Tennessee. Encompassing approximately 105,000 acres, the project consists of overlooks, river access sites, campgrounds, trails, access roads and administrative facilities.

Thus far, we have acquired approximately 82,000 acres of land which the National Park Service is managing under an Interim Management Agreement. We have completed construction of the Leatherwood Ford Road and Bridge. The old bridge was retained for pedestrian use and will become a part of our 250-mile trail system which will be complete at the end of Fiscal Year 1986.

The Bandy Creek recreation site in Tennessee was completed in October 1985 and will be officially dedicated on 19 April 1986. With the $9 million requested in this budget, we will complete construction of the Blue Heron overlook and road and continue construction of the Blue Heron recreation area in Kentucky.

## MAJOR REHABILITATION AND DAM SAFETY ASSURANCE

This budget includes funds for the continuation of rehabilitation work on Locks and Dam 53 and Montgomery Locks and Dam on the Ohio River, and the Muskingum Basin project.

| | Projects | |
|---|---|---|
| Rehabilitation | 3 | $12,500,000 |
| Dam Safety Assurance | 1 | 3,000,000 |
| TOTAL | | $15,500,000 |

### Montgomery Locks and Dam, Ohio River

We are requesting $8.3 million to continue rehabilitation work on Montgomery Locks and Dam. These funds will be used for new lock gates and for repairs to concrete, bulkheads, dam gates and other associated items. The total cost to rehabilitate this project is $33.2 million. The project is scheduled for completion in March 1989.

### Muskingum River Basin

Through Fiscal Year 1985, we have spent over $18 million on engineering and construction work under our Major Rehabilitation Program. The 14 dams built between 1934 and 1938 in the Muskingum Basin have experienced downstream seepage problems. Other problems involve the settlement of dikes, low spots on the rim below the top of dam elevation, and potentially unstable dam slopes.

The estimated cost of the work to be funded from the Construction General appropriation is $24.9 million. Rehabilitation is presently 60 percent complete.

## OPERATION AND MAINTENANCE

The $145.593 million for the Operation and Maintenance Program is 48 percent of the total Ohio River Division budget.

### Scope of Responsibility

| | |
|---|---|
| Locks | 61 |
| Waterways | 2,582 miles |
| Lakes & Reservoirs | 76 |
| Local Protection Projects | 7 |
| Hydropower | 9 |
| O&M BUDGET | $145,593,000 * |

* Includes $4.04 million to continue major rehabilitation of Dashields Locks and Dam and the Muskingum Basin project.

### Dashields Locks and Dam, Ohio River

This request includes $3.2 million for continuing the rehabilitation of Dashields Locks and Dam on the upper Ohio River. Located between Emsworth and Montgomery Locks and Dams, this facility is deteriorating from age and heavy use. We estimate total rehabilitation will require $27 million with planned completion in December 1989.

### Muskingum River Basin

The Fiscal Year 1987 budget request includes $840,000 to initiate rehabilitation of the remaining projects in the Muskingum Basin project now funded under the Operation and Maintenance appropriation. The estimated cost for this work is $18.3 million.

## RECREATION

Our 119 lakes and navigation pools offer superb sources of recreation. Over 90 million people enjoyed recreational opportunities provided by our projects during Calendar Year 1985, an increase of 9.5 percent from the previous year.

## FLOOD DAMAGE PREVENTION

The Ohio River Basin contains 76 flood control reservoirs and 87 local flood protection projects. Built at a cost of $2.75 billion, these projects have prevented $8.3 billion in cumulative basin-wide flood damages--a return of over $3.00 for every $1.00 invested.

In Fiscal Year 1985, flood damages prevented totaled $279 million. Thus far in Fiscal Year 1986, over $360 million in flood damages have been prevented. One significant example was our flood control project, Cecil M. Hardin Lake, when it reached a record pool level last December during flooding on the Wabash River. During Calendar Year 1985, this project alone prevented $15 million in flood damages.

## EMERGENCY OPERATIONS

Throughout our many years of service, we have been very proud of our ability to respond to the needs of the American people. Last year, as part of our Emergency Management Program, we performed recovery work on 56 natural disasters in seven states. Varying in type and magnitude, they included floods, high winds, earth slides, tornadoes and oil/hazardous materials spills.

### Tornadoes--Ohio and Pennsylvania

The tornadoes on 31 May that devastated 10 counties in Ohio and 15 in Pennsylvania resulted in 76 deaths, numerous injuries, and destruction of hundreds of homes and businesses. Our portion of the disaster recovery work resulted in 2,150 damage survey reports, with total damage costs of $7.2 million.

### Flooding--Pennsylvania and West Virginia

According to the Federal Emergency Management Agency (FEMA), the greatest single disaster of the year was the November flooding, caused by the remnants of Hurricane Juan, that hit West Virginia, Pennsylvania, Maryland and Virginia. The division played a lead role in West Virginia and Pennsylvania, the hardest hit area, with over $368 million in damages and loss of 45 lives. While Corps flood control projects prevented $334 million in traditional flood damages there, the regional economy suffered tremendous losses from floodwaters and a shutdown of the Monongahela navigation system. In West Virginia alone, we prepared over 1,300 damage survey reports for FEMA, and performed nearly $5 million in debris removal.

### Monongahela River Crisis

The waters that were devastating West Virginia swept down from the mountains into the north-flowing Monongahela River and into Pennsylvania. The river stages leaped upward and residents of low-lying areas were quickly flooded out. The Tygart flood control lake reduced flood elevations on the Monongahela by five to ten feet, depending on location, preventing over $200 million in damages. Unfortunately, most of the runoff occurred in the three quarters of the basin that remains uncontrolled.

The rapidly rising river broke loose fleets of barges. Out of control, they swept downstream striking and breaking loose still more barges. Many sank, creating dangerous obstacles throughout the navigation pools, and many smashed into our locks and dams.

Particularly hard hit was Locks and Dam 2 near Pittsburgh, with four barges left sitting on the guide walls at grotesque angles blocking both chambers, and one barge sunk in the small chamber. At Maxwell, 50 miles upstream, twisted and jumbled barges protruded through four of the five gate bays, preventing our closing the gates and causing the loss of the navigation pool. This also meant that the water supply for 50,000 citizens, directly dependent on the Maxwell pool, was jeopardized. River commerce was halted, hurting both towing companies and shippers. Millions of dollars in damages were recorded from damaged or sunken equipment, lost cargoes and other business losses. Even a number of coal mines were closed until the river was reopened.

Corps and contractor fleets and equipment worked around the clock to reopen the locks and clear the channel. As an interim measure, we provided technical assistance to the water companies using Maxwell pool as they constructed floating intakes to adapt to the varying stages and continued to provide water supply to the affected communities.

The fleets first had to get through Locks and Dam 2 in order to proceed upriver to Maxwell. Cutting and lifting barges, with work slowed at times to remove accumulated debris, we made it through Lock 2 in 13 days, six days ahead of schedule.

At Maxwell 18 barges were lodged on the structure. Only three were still floating and could be removed easily. Six remained wrapped around the piers, while others were lying at strange angles--some submerged, some partially submerged, some stacked on top of each other, and some on top of the lock walls. Here, we had to use releases from our Tygart Lake to provide adequate water levels for movement of the 19 major pieces of equipment that made up the work fleet. And we had to work through a second, though smaller, flood in December.

Teamwork by the Corps, Coast Guard, and private contractors enabled the gate bays to be cleared of barges, the pool restored, and locks opened to commercial traffic by 16 December. The barge removal operation was a time-consuming, tiresome, high-risk operation completed without injury or loss of life. Although predictions for cleanup ranged up to six months, normal commerce was restored in just 44 days.

I was very proud of my people and I want to emphasize that this is exactly the type of ready response which must be maintained to ensure the integrity of the national waterways system. We stand ready to provide dedicated performance and a demonstrated response, and--as we say in our theme--to be Leaders in Customer Care.

Mr. **Bevill**. We will place the justification material in the record at this point.

[The justifications follow:]

# Justification of Estimates for Civil Functions Activities
# Department of the Army, Corps of Engineers
# Fiscal Year 1987
# SUMMARY OHIO RIVER DIVISION

| General Investigations | FY 1986 Allocations $ | FY 1987 Request $ | Increase or Decrease $ |
|---|---|---|---|
| Surveys Including Phase I Stage of AE&D | 7,365,000 | 7,915,000 | 550,000 |
| Continuation of Planning and Engineering | 2,070,000 | 2,000,000 | -70,000 |
| Advance Engineering and Design | 0 | 0 | 0 |
| Construction General | | | |
| Construction | 80,378,000 2/ | 130,936,000 3/ | 50,558,000 |
| Major Rehabilitation and Dam Safety Assurance | 11,735,000 | 15,500,000 | 3,765,000 |
| Operation and Maintenance, General | | | |
| Project Operation and Maintenance | 156,584,000 | 141,553,000 | -15,031,000 |
| Major Rehabilitation | 0 | 4,040,000 | 4,040,000 |
| TOTAL | 258,132,000 1/ | 301,944,000 | 43,812,000 |

1/ Does not reflect reduction required by the Balanced Budget and Emergency Deficit control Act of 1985 (Public Law 99-177).

2/ Includes $2,250,000 to be derived from the Inland Waterways Trust Fund.

3/ Includes $3,500,000 to be derived from the Inland Waterways Trust Fund.

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| Study | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ |

1. SURVEYS--NEW

a. Navigation Studies: None

b. Flood Damage Prevention Studies: The amount of $400,000 is requested in FY 1987 to initiate and complete one reconnaissance study. The tentative allocation is as follows:

KENTUCKY

| | | | | | |
|---|---|---|---|---|---|
| Kentucky River and Tributaries, KY<br>Station Camp Creek Interim Study | 400,000 | 0 | 0 | 400,000 | 0 |

Station Camp Creek, with a drainage area of 217 square miles, lies in east central Kentucky in portions of Estill, Jackson, and Madison Counties, Kentucky. Station Camp Creek enters the Kentucky River near Mile 218 at Irvine, Kentucky. Previous investigations in the Kentucky River Basin identified alternative regional water supply storage sites in the Station Camp Creek sub-basin in order to meet needs due to reoccurrence of a 50 and 100-year drought condition. Average annual flood damages along the Kentucky River, downstream of Station Camp Creek are estimated at $2,700,000. Local and regional interests desire investigations to address flood control, water supply, recreation and hydropower needs and opportunities. FY 1987 funds will be used to initiate and complete, at full Federal expense, the reconnaissance phase studies of opportunities for multipurpose project development in the Station Camp Creek basin. Estill County, by letter, has expressed interest in and support for the study. Opportunities exist through coordination with the Bluegrass Area Development District to broaden project sponsorship to additional counties and communities in the region, including the City of Lexington and Fayette County. Cost sharing of the feasibility phase of the study would be expected to incorporate several counties and communities in the region with up to one-half of the non-Federal share to be provided by in-kind services. The reconnaissance phase is scheduled for completion in March 1988.

| | | | | | |
|---|---|---|---|---|---|
| Total Flood Damage Prevention Studies | 400,000 | 0 | 0 | 400,000 | 0 |

c. Shoreline Studies: None

d. Special Studies: None

e. Comprehensive Studies: None

f. Project Review Studies: None

| | | | | | |
|---|---|---|---|---|---|
| TOTAL SURVEYS--NEW | 400,000 | 0 | 0 | 400,000 | 0 |

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2. SURVEYS--CONTINUING

a. Navigation Studies: The amount of $2,265,000 is requested to continue three studies during FY 1987. The tentative allocations are as follows:

| Study | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ |
| KENTUCKY | | | | | |
| Cumberland--Tennessee Rivers, AL, GA, KY, MS, NC, TN AND VA | 7,222,000 | 2,767,000 | 800,000 | 1,450,000 | 2,205,000 |

The study area includes both the Tennessee River and Cumberland River Basins. The Tennessee River Basin contains a total of 40,910 square miles and includes portions of seven states. Topographic elevations in the basin range from 7,000 feet in the Smokey Mountains to 300 feet at the Ohio River. The Tennessee River is formed at the junction of the Holston and French Broad Rivers just above Knoxville, Tennessee, and flows 652 miles to the Ohio River near Paducah, Kentucky. The Cumberland River Basin contains a total of 17,914 square miles including portions of two states. Elevations range from 4,150 feet in the Cumberland Mountains to 300 feet at the Ohio River. The Cumberland River is formed at the junction of Poor and Clover Forks near Harlan, Kentucky, and flows 694 miles to the Ohio River near Smithland, Kentucky. The purpose of this study is to analyze navigation problems and to recommend possible solutions in the Tennessee/Cumberland Basins and to determine the advisability of modifying the existing Cumberland River projects to increase hydroelectric power production. FY 1986 funds will be used to complete the Wolf Creek hydropower interim. Analysis of navigation problems on the Tennessee River and of the Cumberland River hydropower system will continue along with work on the Cumberland-Tennessee River below Barkley Canal navigation and Dale Hollow interims. FY 1987 funds will be used to complete the Cumberland-Tennessee River below Barkley Canal navigation interim and continue analysis of navigational problems on the Tennessee River and of the Cumberland River hydropower system. Work will continue on the Dale Hollow hydropower interim and will resume on the Center Hill hydropower interim. The study cost estimate increased $330,000 due to increased lock design costs ($35,000), revisions to economic data bases necessary to more accurately reflect changed traffic patterns and trends and more accurately define project capacities at the navigation projects on the Lower Cumberland and Tennessee Rivers ($145,000), development of an operation simulation model for the Wolf Creek interim study ($30,000), additional Fish and Wildlife Coordination Act requirements for the Wolf Creek interim study ($35,000) and additional cultural resources studies on the Wolf Creek and Cumberland-Tennessee Rivers below Barkley Canal navigation interim studies ($85,000). The study report of the Division Engineer is scheduled for completion in September 1989. Interim reports are scheduled for September 1986 for Wolf Creek Hydropower, February 1987 for Cumberland-Tennessee Rivers below Barkley Canal navigation, September 1988 for Dale Hollow hydropower and September 1989 for Center Hill hydropower.

| Study | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
|  | $ | $ | $ | $ | $ |
| a. Navigation Studies: (cont'd) |  |  |  |  |  |
| WEST VIRGINIA |  |  |  |  |  |
| Big Sandy River and Tug and Levisa Forks, KY, VA and WV | 3,912,000 | 3,242,000 | 325,000 | 165,000 | 180,000 |

The Big Sandy River, which has a total drainage area of 4,290 square miles, is formed by the confluence of Tug and Levisa Forks at Louisa, Kentucky, and empties into the Ohio River at Catlettsburg, Kentucky (Mile 317). Slackwater navigation is maintained by the Corps along the lower Big Sandy River through maintenance dredging. River terminals and docks on the Big Sandy River currently handle over 8 million tons of coal, sand and gravel, petroleum products and chemicals. A further extension of navigation up the Big Sandy River would provide efficient water transportation to a coal producing region which includes parts of Kentucky, West Virginia and Virginia. This region has historically produced 25-30 percent of the nation's annual coal output, over two-thirds of the nation's coal exports, one-half of the nation's metallurgical coal and nearly one-fifth of national steam-coal requirements. The Big Sandy study encompasses navigation improvements on the Big Sandy River and tributaries and additional hydropower facilities to existing multi-purpose reservoirs. FY 1986 funds will be used to continue the Big Sandy navigation interim study. The major activities will include continued impact analysis and comparison of the navigation improvement alternatives. FY 1987 funds will be used to complete the Big Sandy navigation interim study. The study cost estimate remains unchanged from last year. The study report of the Division Engineer is scheduled for completion in September 1990. An interim report is scheduled for December 1986 for Big Sandy navigation. Another planned interim is the Fishtrap Lake Hydropower Study.

| Study | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
|  | $ | $ | $ | $ | $ |
| a. Navigation Studies: (cont'd) |  |  |  |  |  |
| WEST VIRGINIA (cont'd) |  |  |  |  |  |
| Kanawha River Navigation Study, WV | 5,225,000 | 2,725,000 | 400,000 | 650,000 | 1,450,000 |

The Kanawha River, a tributary of the Ohio River, has a total drainage area of about 12,300 square miles within southern West Virginia, southwestern Virginia and a small portion of northwestern North Carolina. The Kanawha River is formed by the junction of the New and Gauley Rivers and flows 97 miles in a northwesterly direction entering the Ohio River, 266 miles downstream from Pittsburgh, Pennsylvania. A nine-foot navigation channel is maintained along the lower 91 miles by Winfield, Marmet and London Locks and Dams on the Kanawha and Gallipolis Locks and Dam on the Ohio River. These projects, now 50 years old, have small dual-chambered 360'X56' locks which severely restrict the use of modern, efficient towing equipment in transporting the more than 15 million tons that use the Kanawha River. In addition, the small size and difficult approach conditions of Winfield Locks have caused increased traffic congestion and will limit future traffic growth on the Kanawha River (physical capacity estimated to be reached about 1990). FY 1986 funds will be used to complete the interim report for Winfield Locks and Dam replacement. FY 1987 funds will be used to continue studies relevant to an interim report for Marmet Locks and Dam. Work will include detailed formulation and evaluation of potential plans for modernization or rehabilitation of the existing Marmet Locks and Dam. During reconnaissance level studies, a number of alternatives were investigated for Marmet including project rehabilitation. It was not apparent at that time that additional lock capacity would be required. However, based on more detailed analysis performed during the Winfield study, increased lock capacity at Marmet appears to be feasible and may be economically feasible; consequently increased study efforts will be required. The study cost estimate increased $1,375,000 due to additional design refinements and formulation of the recommended Winfield plan ($500,000) and additional studies for Marmet including engineering, design and formulation for additional alternatives to increase lock capacity and environmental and social impact analysis ($875,000). The study report of the Division Engineer is scheduled for completion in September 1990. Interim reports are scheduled for July 1986 for Winfield Locks and Dam replacement and September 1989 for Marmet Locks and Dam replacement. Another planned interim is the London Locks and Dam replacement.

| Study | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| Total Navigation Studies | 16,359,000 | 8,734,000 | 1,525,000 | 2,265,000 | 3,835,000 |

b. Flood Damage Prevention Studies: The amount of $4,875,000 is requested to continue nine studies during FY 1987. The tentative allocations are as follows:

| Study | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ |
| KENTUCKY | | | | | |
| Kentucky River and Tributaries, KY | 2,917,000 | 2,187,000 | 300,000 | 430,000 | 0 |

The Kentucky River, a tributary of the Ohio River, has a drainage area of 6,966 square miles and lies wholly within the Commonwealth of Kentucky. The Kentucky River is formed by the junction of its North and South Forks and flows northwesterly for about 255 miles. The area includes the mountainous terrain of Appalachia as well as the rolling topography of the Bluegrass region. Major man-made water resource structures in the basin include 14 navigational locks and dams on the Kentucky River, of which Locks 1 through 4 are currently operated, and three large multipurpose lakes--Buckhorn Lake, Carr Fork Lake and Herrington Lake (non-Federal Project)--are located on tributary streams. Major water resources concerns include: flood damages along the main stem at Frankfort and in the upper basin, at Hazard, dependable raw water supply storage for some 12 municipalities and industries, utilization of the navigation system, and other related problems. Investigations of reservoir sites on 12 tributary streams were undertaken from 1963 to 1970. Several projects were considered; however, due to the lack of economic feasibility and/or public acceptance, further study efforts were suspended. Funds available in FY 1980 through FY 1985 were used to conduct reconnaissance level studies for local flood protection projects at Frankfort, Clay City, Hazard and Jackson, Kentucky, hydropower studies at Buckhorn Lake and navigation modernization studies for the Kentucky River Navigation Project. Favorable findings resulted in: (1) continuation of detailed planning studies at Frankfort under the Frankfort Local Protection Project authorization; (2) continuation of detailed studies at Clay City under the continuing authority program; (3) a final feasibility report on the Hazard Local Protection Project completed in FY 1985. FY 1986 funds will be used to continue feasibility level studies for the Lower Kentucky River Navigation Modernization. FY 1987 funds will be used to complete the Lower Kentucky River Navigation Modernization report. The study cost estimate increased $20,000 for additional public coordination and final report preparation for the Lower Kentucky River Navigation Modernization interim and overall study. The study report of the Division Engineer is scheduled for completion in September 1987.

| Study | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ |
| b. Flood Damage Prevention Studies: (cont'd) | | | | | |
| KENTUCKY | | | | | |
| Ohio River Main Stem, KY, IL, IN, OH, PA and WV | 14,970,000 | 6,964,000 | 2,575,000 | 2,560,000 | 2,871,000 |

The Ohio River Valley contains one-third of the Ohio Basin's population of about 25 million people. The system of navigation locks and dams along the river from Pittsburgh to Cairo is a vital artery for the flow of commercial products between the many industrial complexes in this basin and the rest of the nation. Many components of the system have provided service for over 50 years, and are reaching the end of their useful life. Modernization of the system is critical to avoid disruption of the flow of commerce and costly stop-gap maintenance measures. The dam components of the navigation system are subject to increasing pressure by non-Federal interests for hydropower utilization. This development is piecemeal and uncoordinated. The cumulative impacts of non-Federal development on this important infrastructure have not been adequately investigated or documented. There is significant hydropower potential associated with systematic hydropower development of the dams particularly in the area of meeting peak electrical energy demands. It is not practical for non-Federal interests to pursue a system optimization approach because Congressional action would be needed to alter project operations. FY 1986 and FY 1987 funds will be used to continue priority emphasis on evaluation of the adequacy of existing navigation structures. Studies for replacement of Emsworth, Dashields and Montgomery Island Locks and Dams on the Upper Ohio and investigations of the Lower Ohio with particular emphasis on McAlpine Locks and Dam will continue. In addition, efforts will continue on assessment of non-Federal hydro impacts on the navigation system and on development of a plan to optimize development of the hydropower resource. While the majority of major metropolitan areas in the valley are afforded flood protection by local protection projects as well as upstream basin reservoirs, an occurence of a 100-year flood on the Ohio River Main Stem would inundate approximately 867,000 acres. Efforts will continue to update flood damage information and evaluate possible solutions for flooding problems in unprotected areas. The study cost estimate increased $950,000 due to a need to analyze potential system environmental impacts of navigation traffic ($350,000), the complexities of mathematical similation analysis of lock delays at critical projects ($400,000) and more detailed evaluation of non-structural alternatives ($200,000). The study report of the Division Engineer is scheduled for completion in September 1989. Interim reports are scheduled for March 1988 and September 1988 for the Upper and Lower Ohio navigation studies respectively, and September 1989 for the Flood Damage Evaluation Study.

| Study | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ |
| b. Flood Damage Prevention Studies: (cont'd) | | | | | |
| KENTUCKY | | | | | |
| Tradewater River Basin, KY | 850,000 | 300,000 | 250,000 | 200,000 | 100,000 |

The Tradewater River is located in western Kentucky and is a tributary of the Ohio River (confluence at Ohio River Mile 873.3 near Caseyville, Kentucky). The drainage area of the basin covers approximately 943 square miles, including portions of six counties. Basin terrain consists of the gently rolling hills of the Mississippian Plateau and the rolling to hilly uplands of the Western Kentucky coal fields. The Tradewater River Basin economy is based primarily on agriculture and mining with important contributions from manufacturing and service activities. Communities in or at the edge of the basin, Providence and Madisonville have grown from their 1960 population of 3,770 and 14,100 to 1980 populations of 4,434 and 16,979, respectively. Throughout the 110-mile length of the Tradewater River, poor drainage, rural and urban flooding, and severe water quality problems are major concerns. Poor drainage and acid mine seepage have contributed to heavy fish kills over the years with some stream reaches lacking a fishery altogether. Interest in and support for the studies and solutions to these problems come from each of the counties of the Tradewater River Basin and the Pennyrile and Green River Resource and Conservation Development Councils and the Lower Tradewater River Conservancy District. It is anticipated that local governments, the Resource and Conservation Development Councils, and the Conservancy District, in conjunction with the Commonwealth of Kentucky, will act as the local sponsor and provide local cost sharing for a mutually agreed upon feasibility phase of the study. FY 1985 funds were used to fully fund the reconnaissance phase at full Federal expense. FY 1986 funds will be used to initiate the feasibility phase of the study at Federal expense upon agreement by the local sponsor to share 50 percent of the feasibility phase costs after cost sharing is implemented. The effective date of implementation is 15 March 1986. FY 1987 funds will be used to continue the Federal share of the feasibility phase studies. The preliminary estimate of cost for the feasibility phase is $1,100,000. A summary of study cost sharing is as follows:

| | |
|---|---|
| Total estimated study cost | $1,400,000 |
| Reconnaissance phase (Federal) | 300,000 |
| Feasibility phase (Federal) | 550,000 |
| Feasibility phase (Non-Federal) | 550,000 |

The reconnaissance phase is scheduled for completion in March 1986. The feasibility study is scheduled for completion in March 1988.

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| Study | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ |
| b. Flood Damage Prevention Studies: (cont'd) | | | | | |
| MARYLAND | | | | | |
| Monongahela-Youghiogheny River Basin, MD, PA and WV | 8,733,000 | 6,128,000 | 250,000 | 700,000 | 1,655,000 |

The Monongahela River Basin, which drains an area about 7,400 square miles (including the Youghiogheny River Basin drainage of 1,768 square miles) is located in Maryland, Pennsylvania and West Virginia. The Monongahela River is formed by the junction of the Tygart and West Fork Rivers at Fairmont, West Virginia. The river flows in a northeasterly direction through West Virginia into Pennsylvania thence northerly to Pittsburgh, Pennsylvania, where it joins the Allegheny River to form the Ohio River. The river is canalized in its entirety. Federally constructed and operated reservoirs in the basin include Tygart Lake and Youghiogheny River Lake, which are operated for flood control and low water regulation. Problems in the Monongahela River Basin include aged and deteriorating locks and dams, a substantial level of flood damages, water quality problems, a need for water supply of sufficient quality for various purposes and a lack of water oriented recreation facilities. The study is considering navigation structure improvements, and multiple-purpose water control facilities. A major output of this study was the interim feasibility report on Locks and Dams 7 & 8 which was completed in January 1984. The report has been approved by BERH and the Chief of Engineers and is currently under review by the Office of the Secretary of the Army. FY 1986 and FY 1987 funds will be used to continue ongoing study of the Lower Monongahela River Navigation System (Locks and Dams No. 2, 3 and 4). The study cost estimate remains unchanged from last year. The study report of the Division Engineer is scheduled for completion in September 1989. An interim report is scheduled for September 1989 for the Lower Monongahela River Navigation System.

| Study | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ |
| b. Flood Damage Prevention Studies: (cont'd) | | | | | |
| OHIO | | | | | |
| Central Ohio Survey, OH | 4,035,000 | 3,100,000 | 375,000 | 435,000 | 125,000 |

The study will encompass the investigation of all structural and nonstructural measures which could be recommended for orderly development of the region's water resources and satisfaction of current and long-term needs. The region encompasses a number of sizeable basins and minor Ohio River tributaries with a total drainage area of almost 11,000 square miles in central and southeastern Ohio. Flood problems remain in the Scioto River, Hocking River, and Raccoon Creek Basins, and at isolated communities on other tributaries. Water supply problems exist and could become serious particularly in the Hocking River Basin. Possible solutions to be considered include structural improvements such as multiple-purpose reservoirs, local protection projects and bank stabilization, together with nonstructural floodplain management practices, singly or in combination. Interim feasibility reports recommending local flood protection projects at Logan, Nelsonville, and North Chillicothe have been completed. FY 1986 funds will be utilized to complete flood damage prevention studies for West Columbus and continue flood damage prevention studies along the upper and lower Scioto River. FY 1987 funds will be utilized to complete the flood damage study for the Upper Scioto River and continue the Lower Scioto River study. The study cost estimate remains unchanged from last year. The study report of the Division Engineer is scheduled for completion in April 1988. Interim reports are scheduled for April 1986 for West Columbus Local Protection Project, September 1987 for the Upper Scioto study and April 1988 for the Lower Scioto study.

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| Study | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ |
| b. Flood Damage Preventation Studies: (cont'd) | | | | | |
| OHIO | | | | | |
| Central Ohio Survey, OH--<br>Grandview Heights Interim Study | 400,000 | 0 | 200,000 | 100,000 | 100,000 |

The City of Grandview Heights is located in Franklin County in Central Ohio, and is virtually surrounded by the City of Columbus. Two rivers form the main drainage features of Grandview Heights. The Olentangy River flows south along the eastern edge of the city to its confluence with the larger Scioto River, which flows to the southeast along the city's western and southern borders. Periodic overflow of the Scioto River and the Olentangy River is the city's principal flood problem. The City of Grandview Heights has indicated willingness to act as the local sponsor and it is anticipated that the city will provide local cost sharing for a mutually agreed upon feasibility phase of the study. FY 1986 funds will be used to initiate and complete the reconnaissance phase of the study at full Federal expense. Emphasis will be on formulating a plan for reducing flood damages in the Grandview Heights area. FY 1987 funds will be used to initiate the feasibility phase of the study. The preliminary cost estimate of the feasibility phase of the Central Ohio, Grandview Heights area is $400,000, and is to be shared on a 50-50 basis by Federal and non-Federal interests. A summary of cost sharing for the interim is as follows:

| | |
|---|---|
| Total Estimated Interim Cost | $400,000 |
| Reconnaissance Phase (Federal) | 200,000 |
| Feasibility Phase (Federal) | 200,000 |
| Feasibility Phase (non-Federal) | 200,000 |

The reconnaissance and feasibility phases of this interim study are scheduled for completion in June 1987 and June 1989, respectively.

| Study | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| b. Flood Damage Prevention Studies: (cont'd) | | | | | |
| OHIO (cont'd) | | | | | |
| Miami River, Little Miami River and Mill Creek Basin | 4,408,000 | 3,923,000 | 300,000 | 50,000 | 135,000 |

The overall drainage area of the contiguous Miami River, Little Miami River and Mill Creek Basins totals about 7,300 square miles. Of this total, some 5,870 square miles are in the study area located in southwestern Ohio. The three streams are tributaries to the Ohio River near Cincinnati. The general topography of the Miami and Little Miami River Basin ranges from rolling to hilly, and the Mill Creek Basin ranges from rolling to flat. Southwestern Ohio has a high degree of industrial development, especially in the central and southern portions. Highest priority problems include recent urban flood damages resulting from severe summer storms and increased runoff from rapidly developing watersheds. Specific flood occurrences on Lilly Creek at Dayton, Pleasant Run at Fairfield, Little Miami River at Bellbrook, Holes Creek at West Carrollton, Great Miami River at Moraine, Ohio, have focused attention on the need for solutions to these problems. Other problems in the area include water supply, water quality control, streambank erosion and sediment damages. Opportunities exist at Caesar Creek Lake to re-allocate existing water supply storage to hydropower purposes on a temporary or permanent basis. Interim report completions resulting from this study authority include Mill Creek, Ohio LPP (1970, now under construction), Holes Creek at West Carrollton and Moraine, Ohio LPP (1980), Fairfield, Ohio LPP (1982), and William H. Harsha Lake, Ohio, Hydropower (1984). FY 1985 funds were used in completing a favorable reconnaissance level study for flood control at Moraine, Ohio. FY 1986 funds will be used to continue the Moraine, Ohio, feasibility stage studies. FY 1987 funds will be used to complete the Moraine, Ohio, LPP study report. The study cost estimate increased $85,000 to investigate re-allocation of water supply storage to hydropower at Caesar Creek Lake. The study report of the Division Engineer is scheduled for completion in September 1988. Interim studies are scheduled for September 1987 for Moraine, Ohio Local Protection Project. Another planned interim is the Caesar Creek Lake Hydropower study.

| Study | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
|  | $ | $ | $ | $ | $ |
| b. Flood Damage Prevention Studies: (cont'd) |  |  |  |  |  |
| OHIO (cont'd) |  |  |  |  |  |
| Muskingum River Basin, OH-Wolf Creek and Tuscarawas River Interim Study | 600,000 | 200,000 | 200,000 | 100,000 | 100,000 |

The Muskingum River Basin is in eastern Ohio and covers an area of 8,051 square miles. Urban development uses about one-sixth of the land, with the greatest concentration along the northern rim of the basin. About one-half of all land in the basin is used for agriculture. There are a large number of reservoirs and local protection projects in the basin, including 16 reservoirs and five local protection projects constructed by the Corps of Engineers. Fourteen of these reservoir projects were developed in the 1930's in conjunction with the Muskingum Watershed Conservancy District and the State of Ohio. An interim report on the Muskingum River Basin study was submitted to Congress on 27 April 1979 recommending development of local protection projects at Killbuck and Mansfield. The parent survey was last budgeted for in FY 1983 and received Congressional add on funding in FY 1985 to be applied to an interim flood control study of the Wolf Creek and Tuscarawas Rivers. This interim study area includes that portion of the Tuscarawas River draining upstream from Dover Dam, a total of 1,115 square miles. Although flood damages are reduced by existing projects, flood problems remain in certain areas such as Barberton and along Wolf Creek. FY 1985 funds were used to fully fund the reconnaissance phase at full Federal expense. FY 1986 funds will be used to initiate the feasibility phase of the study at Federal expense upon agreement by the local sponsor to share 50 percent of the feasibility phase costs after cost sharing is implemented. The effective date of implementation is 15 March 1986. FY 1987 funds will be used to continue the Federal share of the feasibility phase studies. The preliminary cost estimate of the feasibility phase of the Wolf Creek and Tuscarawas River interim is $800,000. A summary of cost sharing for the interim is as follows:

|  |  |
|---|---|
| Total Estimated Interim Cost | $1,000,000 |
| Reconnaissance Phase (Federal) | 200,000 |
| Feasibility Phase (Federal) | 400,000 |
| Feasibility Phase (non-Federal) | 400,000 |

It is anticipated that the Muskingum Watershed Conservancy District will act as sponsor and provide local cost sharing for a mutually agreed upon feasibility phase of the "Wolf Creek and Tuscarawas River, Ohio Interim Flood Control Study." The reconnaissance and feasibility phases of this interim study are scheduled for completion in March 1986 and September 1988, respectively.

| Study | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
|  | $ | $ | $ | $ | $ |

b. Flood Damage Prevention Studies: (cont'd)

TENNESSEE

| | | | | | |
|---|---|---|---|---|---|
| Metropolitan Region of Nashville, TN | 4,632,000 | 3,592,000 | 415,000 | 300,000 | 325,000 |

The ten county study area centers around Metropolitan Nashville-Davidson County, Tennessee, and includes water resources planning activities in Cheatham, Dickson, Montgomery, Robertson, Rutherford, Sumner, Trousdale, Williamson and Wilson Counties, Tennessee. The area has grown rapidly and this trend is expected to continue. The major water related problems in the area are frequent recurring flood damages. Studies completed to date have addressed land treatment of wastewater, sludge management, water quality of urban runoff, stream waste assimilative capacities, regional water supply studies and an environmental resources inventory atlas. Early outputs from the study have also included recommendations to implement flood reduction studies through the Continuing Authorities Program at several locations. The study area encompasses many complex hydrologic subbasins under rapid change due to dynamic, continuing growth. This situation has resulted in significant flooding problems and a high level of community concern. Local and regional officials and Congressional representatives have expressed high interest in finding solutions to these flooding problems. FY 1986 funds will be used to complete the Bartons and Sinking Creeks and Mill Creek Interim reports and to continue studies on the Harpeth River study. FY 1987 funds will be used to continue the Harpeth River flood damage reduction study. The study cost estimate increased $335,000 due to the need to review prior estimates of flood damage problems along the main stem Cumberland River. New development and recent flood events have resulted in increased damages and renewed public interest in finding solutions to these problems. This will involve updating flood damage data, updating hydrology models to include recent flood events, determining average annual flood damages, reformulating flood damage abatment alternatives, and evaluating these alternatives. The study report of the Division Engineer is scheduled for completion in September 1989. Interim reports are scheduled for June 1986 for Mill Creek, September 1986 for Bartons and Sinking Creeks and September 1989 for Harpeth River.

| | | | | | |
|---|---|---|---|---|---|
| Total Flood Damage Prevention Studies | 41,545,000 | 26,394,000 | 4,865,000 | 4,875,000 | 5,411,000 |

c. Shoreline Protection Studies: None

d. Special Studies: None

e. Comprehensive Studies: The amount of $375,000 is required to continue two authorization reports during FY 1987. The tentative allocations are as follows:

INDIANA

| Study | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| Wabash River Basin Comprehensive (Authorization Reports), IN and IL--Navigation Interim Study | 2,900,000 | 0 | 600,000 | 200,000 | 2,100,000 |

The Wabash River is the second largest tributary to the Ohio River. Originating in Mercer County, Ohio, it flows southwest across Indiana, then southerly forming the boundary between the States of Indiana and Illinois for about 200 miles. Mineral, grain, and petroleum resources are extensive in the basin. 1974 studies reported coal reserves of 57.5 billion tons, corn acreages of 16.3 million acres and soybean acreages of 13.3 million acres. Petroleum fuels and fertilizers are additional commodities utilized in significant volumes in the study area. Local and regional interests have desired navigation improvements along the Wabash River as a means of providing improved transportation and, therefore, increased markets for mineral and agricultural production in the basin. The Wabash River rises some 50 feet from its confluence with the Ohio River to Mt. Carmel, Illinois, a distance of 95 river miles. The river rises an additional 70 feet in the next 119 miles to Terre Haute, Indiana, both communities being potential terminals for considered navigation improvements. No local sponsor or cost sharing is required for the reconnaissance or feasibility phases of inland navigation survey investigations. FY 1985 Supplemental Appropriations Act funds will be used, during FY 1986 and FY 1987, to initiate and complete the reconnaissance phase of study with emphasis on development of alternative concepts and costs, commodity, traffic, and rate studies, and identification of significant environmental aspects. FY 1987 funds will be used to initiate the feasibility phase of the study. The reconnaissance and feasibility phases of this interim study are scheduled for completion in April 1987 and September 1989, respectively.

| Study | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| e. Comprehensive Studies: (cont'd) | | | | | |
| WEST VIRGINIA | | | | | |
| Kanawha Basin Comprehensive (Authorization Reports), WV, VA and NC | 5,304,000 | 3,829,000 | 225,000 | 175,000 | 1,075,000 |

The Kanawha River Basin is entirely within the Appalachian region and covers 12,300 square miles, primarily in central West Virginia. Current population of the basin is about 990,000 with the major urban area being Charleston, West Virginia, with a population of about 270,000. Two major study efforts are underway. The first effort involves flood damage prevention studies in the Greenbrier River Basin, particularly in the vicinity of Marlinton, West Virginia. The disastrous flood of November 1985 was the largest flood of record in many parts of the basin causing approximately $70,000,000 in damages and loss of life. All study efforts completed to date for this area must be reassessed in view of the changes caused by this disastrous flood. The second study effort addresses options for reformulation of the existing Bluestone Lake multiple purpose project. Hydropower facilities were authorized, but never constructed. Local interests continue to express interest in sponsoring development of these facilities and indications are that substantial generating capacity will be economically justified. In addition, development of hydropower would provide impetus for solving other longstanding problems and creates opportunities for enhancing the overall utility of the project. Lake recreation is degraded by the small amount of surface area and the numerous shallow water areas. Downstream whitewater rafting is important to the economy of the area and improvements in the timing and reliability of flows would be very advantageous to that industry. Improvements in the project facilities and operation would also further the purposes of the New River Gorge National River as required by Public Law 95-625. It would also enhance development of the New River Parkway, a state-sponsored scenic parkway. The outcome of this effort will be a plan that optimizes benefits from the project including implementation of the authorized hydropower purpose. FY 1986 and 1987 funds will be used to continue the Greenbriar/Marlinton and Bluestone efforts. Impacts of the recent flooding on the overall Kanawha comprehensive study have not been fully assessed. Among alternatives being reevaluated is a multi-purpose reservoir in the Greenbriar valley. If this alternative is viable, coordination of the Greenbriar/Marlinton and Bluestone efforts will be required and may impact completion of the Bluestone effort. The study cost estimate increased $700,000 due to recent disastrous flooding which results in a need for reevaluation of the Marlinton Local Protection Project basic data and study conclusions including reexamination of previously considered dams. The study report of the Division Engineer is scheduled for completion in September 1990. Interim reports are scheduled for September 1989 for Marlinton Local Protection Project and September 1988 for Bluestone multipurpose study. Another planned interim is the Sutton Lake hydropower study.

| Study | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| Total Comprehensive Studies | 8,204,000 | 3,829,000 | 825,000 | 375,000 | 3,175,000 |
| f. Project Review Studies: None | | | | | |
| Total Survey - Continuing | 46,108,000 | 38,957,000 | 7,215,000 | 7,515,000 | 12,421,000 |

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| Study | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ |

3. SURVEYS--Continuation of Planning and Engineering Studies

a. Navigation Studies: The amount of $1,500,000 is requested to continue one planning and engineering study during FY 1987. The tentative allocation is as follows:

ILLINOIS

| | | | | | |
|---|---|---|---|---|---|
| Locks & Dams 52 & 53, IL & KY | 7,500,000 | 0 | 250,000 | 1,500,000 | 5,750,000 |

The proposed replacement structure for Ohio River Locks and Dams 52 & 53 is located in Pulaski County, Illinois and Ballard County, Kentucky on the Ohio River about 964.4 miles downstream from Pittsburgh, Pennsylvania. This project would consist of two 110 ft. by 1,200 ft. locks adjacent to the Illinois bank, and a dam comprised of six 110 ft. wide tainter gates, a 1,120 ft. wide navigable pass provided by drum gates, and 880 ft. of fixed weir. The proposed project to be named Olmstead Lock and Dam will replace two existing Ohio River Locks and Dams (52 and 53) that are over 50 years old, include temporary lock structures, and do not conform to current design criteria for stability. Projected increases in waterway traffic demands in combination with the limited capacity of the existing locks will result in increased lockage delays. Commercial navigation on the lower Ohio River in 1984 was 73.6 million tons through Lock 52 and 67.3 million tons through Lock 53. The proposed facilities that would provide for efficient and uninterrupted river traffic are highly important in normal times and the importance is greatly increased in times of national emergencies. The October 1985 estimated project cost is $566,000,000. The average annual economic benefits of $203,300,000 are attributable to navigation. The benefit-cost ratio is 2.8 to 1 at an 8-5/8 percent interest rate. FY 1986 funds will be used to initiate Continuation of Planning and Engineering consisting of the General Design Conference, preparation of the Plan of Action, foundation explorations and investigations and the General Design Memorandum. FY 1987 funds will be used to continue foundation explorations and investigations, model studies and General Design Memorandum. Cost sharing is not applicable as costs will be recovered through fuel taxes. The continuation of Planning and Engineering effort is scheduled for completion in September 1989.

| | | | | | |
|---|---|---|---|---|---|
| Total Navigation Studies | 7,500,000 | 0 | 250,000 | 1,500,000 | 5,750,000 |

| Study | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
|  | $ | $ | $ | $ | $ |

b. Flood Damage Prevention Studies: The amount of $500,000 is requested to continue one and initiate one planning and engineering study during FY 1987. The tentative allocations are as follows:

OHIO

|  |  |  |  |  |  |
|---|---|---|---|---|---|
| Holes Creek at West Carrollton and Moraine, OH | 570,000 | 0 | 150,000 | 250,000 | 170,000 |

The study area is located in southwest Ohio, about seven miles south of Dayton, Ohio in Montgomery County. Flooding along low lying areas of Holes Creek has resulted in requests from local officials for Federal assistance. The plan of improvement as recommended in House Document 98-196 and submitted to the Congress in March 1984 consists of 1.08 miles of channel enlargement and replacement of the Conrail railroad bridge. This plan would pass the 25-year frequency flood without damages to adjacent properties (under future runoff conditions) and would reduce the stage of less frequent (larger) floods. The plan includes aesthetic, environmental, and recreational features. The October 1985 estimated project cost is $6,080,000. The average annual benefits are $952,000 of which $842,000 is for urban flood protection and $110,000 is for recreation development. The benefit to cost ratio is 1.4 based on an interest rate of 8-5/8 percent. FY 1986 funds will be used to initiate continued planning and engineering studies. FY 1987 funds will be used to continue detailed planning and engineering studies. The Miami Conservancy District will act as the local sponsor. Consistent with the cost-sharing and financial concepts agreed to by the Administration and Senate majority leadership, local interests will be required to provide lands, easements, and rights-of-way necessary for construction of the project, accomplish all relocation of utilities and any other structures or improvements made necessary by construction of the project, pay one-half of the first costs of the recreational features, bear all costs of operation, maintenance, and replacement of recreation facilities, support the project at the level of local financing and cost-sharing participation required under the policies in effect at the time the project is placed under construction, and bear all costs of operation, maintenance, and replacement of flood control facilities. The continuation of planning and engineering effort is scheduled for completion in September 1988.

| Study | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ |
| b. Flood Damage Prevention Studies: (cont'd) | | | | | |
| OHIO | | | | | |
| North Chillicothe, Ohio | 800,000 | 0 | 0 | 250,000 | 550,000 |

North Chillicothe is situated on the left bank of the Scioto River about 49 miles south of Columbus, Ohio. The project area consists partially of the northern portion of the City of Chillicothe and portions of adjacent Ross County. The banks of the Scioto are low, the flood plain is wide and the stream gradient is gentle. These factors combined with excessive rainfall results in significant overbank flooding. The plan recommends construction of an earth levee along the left bank of the Scioto River for a length of 13,400 feet, appropriate closure structures, stone slope protection and a pump station. A hard surfaced bike and hike trail with two rest areas is also recommended along the top of the levee. The plan will provide protection up to the Standard Project Design Flood. The October 1985 estimated project cost is $10,740,000. The average annual benefits are $1,604,000. The benefit-cost ratio is 1.5 at an 8-5/8 percent interest rate. FY 1987 funds will be used to initiate detailed planning and engineering studies. The City of Chillicothe will act as the local sponsor. Consistent with the cost sharing and financial concepts agreed to by the Administration and Senate majority leadership, local interests will be required to provide lands, easements and rights-of-way necessary for construction of the project, accomplish all relocation of utilities and any other structures or improvements made necessary by construction of the project, pay one-half of the first costs of the recreational features, bear all costs of operation, maintenance, and replacement of recreation facilities, support the project at the level of local financing and cost-sharing participation required under the policies in effect at the time the project is placed under construction, and bear all costs of operation, maintenance, and replacement of flood control facilities. This continuation of planning and engineering effort is scheduled for completion in September 1989.

| | | | | | |
|---|---|---|---|---|---|
| Total Flood Damage Prevention Studies | 1,370,000 | 0 | 150,000 | 500,000 | 720,000 |

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| Study | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| c. Shoreline Protection Studies: None. | | | | | |
| d. Special Studies: None. | | | | | |
| e. Comprehensive Studies: None. | | | | | |
| f. Project Review Studies: None. | | | | | |
| TOTAL Surveys-Continuation Planning and Engineering Studies | 8,870,000 | 0 | 400,000 | 2,000,000 | 6,470,000 |
| 4. Phase I Stage of Advance Engineering and Design--New--None. | | | | | |
| 5. Phase I Stage of Advance Engineering and Design--Continuing--None. | | | | | |
| 6. Phase I Stage of Advance Engineering and Design--Continuation of Planning and Engineering Studies--None. | | | | | |
| GRAND TOTAL--Surveys and Phase I Stage of Advance Engineering and Design | 75,378,000 | 38,957,000 | 7,615,000 | 9,915,000 | 18,891,000 |

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**APPROPRIATION TITLE:** Construction, General - Locks and Dams (Navigation)

**PROJECT:** Smithland Locks and Dam Illinois, Indiana and Kentucky (Continuing)

**LOCATION:** The project is located in Livingston County, Kentucky, and Pope County, Illinois, on the Ohio River, 918.5 miles downstream from Pittsburgh, Pennsylvania. The upper pool will extend upstream about 72 miles to the completed Uniontown Locks and Dam.

**AUTHORIZATION:** 1909 River and Harbor Act (Section 6)

**BENEFIT-COST RATIO:** The remaining benefit-remaining cost ratio is not applicable because the project is nearing completion. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1970) was 6.4 to 1. The benefit-cost ratio was based on a fair share of the Ohio River navigation system benefits.

| SUMMARIZED FINANCIAL DATA | | | Accum. % of Est. Fed. Cost |
|---|---|---|---|
| Estimated Federal Cost (Corps of Engineers) | | $275,800,000 | |
| Estimated Federal Cost (Forest Service) | | 851,000 | |
| Estimated Non-Federal Cost | | 318,000 | |
| Cash Contribution | $ 0 | | |
| Other Costs | 318,000 | | |
| Total Estimated Project Cost | | $276,969,000 | |
| Allocations to 30 September 1985 | | $270,511,000 | |
| Conference Allowance for FY 1986 | $2,700,000 | | |
| Allocation for FY 1986 | | 2,770,000 2/ | |
| Allocations to Date | | $273,281,000 | 99 |
| Allocation Requested for FY 1987 | | 486,000 | 99 |
| Scheduled Balance to Complete after FY 1987 | | 0 | |
| Unscheduled Balance to Complete after FY 1987 | | 2,033,000 | |

| STATUS (1January 1986) | PERCENT COMPLETE | COMPLETION SCHEDULE |
|---|---|---|
| Lands and Damages | 99 | Sep 1986 |
| Relocations | 99 | Sep 1986 |
| Reservoir | 100 | |
| Dam | 99 | Dec 1986 |
| Locks | 100 | |
| Roads | 100 | |
| Channels and Canals | 100 | |
| Recreation Facilities (Scheduled) | 36 | Dec 1986 1/ |
| Buildings, Grounds & Utilities | 99 | Oct 1986 |
| Permanent Operating Equipment | 100 | |
| Entire Project | 98 | Sep 1987 |

1/ Recreation facilities at Tower Rock Site, Illinois are not scheduled pending development of cost sharing agreements with local interests for construction and non-Federal operation and maintenance, consistent with projects for which recreation facilities are being constructed under the provisions of the Federal Water Project Recreation Act of 1965 (PL 89-72), as amended.

2/ Reflects $300,000 reduction assigned as savings and slippage, and $370,000 transferred to project.

DIVISION: Ohio River DISTRICT: Louisville REGION: Ohio

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## PHYSICAL DATA

**Dam**: Type - Gate controlled & fixed weir
Length - 3,560 feet
Gates - Number and Type - 11, Tainter
Length, clear span - 110 feet

**Locks**: Number - 2
Two - 110 ft. x 1,200 ft.
Normal lift - 22 ft

**Relocations**:
Roads - 4.3 miles - $[illegible]
Railroads - $[illegible]
Utilities & Structures - $1,[illegible]

**Lands and Damages**: Acres - 13,700; Type - Predominately agricultural; Improvements - Commercial loading facilities

**JUSTIFICATION**: In 1982 commercial navigation through the project area was [illegible] tons. The project has replaced two existing Ohio River Locks and Dams (50 and 51) incorporating modern lock facilities with two parallel chambers 110 x 1,200 feet in lieu of the single 110 x 600 foot obsolescent locks previously in service at the two structures. Previous structures were completed in 1928 and 1929, respectively and their physical condition, together with obsolete design, resulted in high maintenance and operation costs and inefficient handling of traffic. The old locks and dams were deactivated and removed as follows:

| | Deactivated | Removed |
|---|---|---|
| Lock and Dam 50 | 3 November 1980 | 9 December 1980 |
| Lock and Dam 51 | 23 September 1980 | 30 October 1980 |

The steady rise in Ohio River tonnage experienced during the 1960's and 1970's peaked in 1979 at [illegible] tons. Since that time, the river tonnage has declined as the result of the downturn in the national economy, fluctuating to 150,700,000 tons in 1981 and 130,391,000 tons in 1983. However, recently completed studies continue to show solid growth of waterway traffic in the Ohio River Basin.

Improvements in towing equipment and the rapid industrial expansion that occurred along the Ohio River during the 1960's and 1970's demonstrated that the old structures were not capable of efficiently handling the modern large tows and the large volume of traffic using the river. This demand upon the old facilities accelerated their deterioration and resulted in situations where any major breakdown would have created intolerable conditions. The new facilities that provide for efficient and uninterrupted river traffic are highly important in normal times and the importance is greatly increased in times of national emergencies. Average annual benefits are estimated at $[illegible] and are broken down as follows:

| Benefits | Amount<br>(1 October 1985) |
|---|---|
| Navigation | $50,100,000 |
| Redevelopment | 1,746,000 |
| Total | $51,846,000 |

FISCAL YEAR 1987: The requested amount will be applied to:

| | |
|---|---|
| Complete Recreation Facilities | $ 452,500 |
| Buildings, Grounds, & Utilities | 2,400 |
| Engineering and Design | 10,000 |
| Supervision and Administration | 21,100 |
| | $ 486,000 |

The funds requested are required for construction during the budget year.

NON-FEDERAL COSTS: Construction of the navigation features of the project required modification of existing facilities which were originally constructed under Department of the Army permit pursuant to Section 10 of the Rivers and Harbors Act approved 3 March 1899. The owners adapted their facilities to the new project conditions at an estimated cost of $318,000.

STATUS OF LOCAL COOPERATION: None required for navigation features of the project. However, owners of affected private facilities which are located within the limits of river under Federal jurisdiction modified these facilities at their own expense in accordance with the permit regulations under which the facilities were originally constructed.

A lease agreement executed by the Fiscal Court of Livingston County, Kentucky for operation and management of recreation facilities at Site 3, Givens Creek and Site 1-A, Dyer Creek, Kentucky was approved 23 September 1983 by the Assistant Secretary for Real Property, Office of the Secretary of the Army.

License agreements executed by the Kentucky Department of Fish and Wildlife for operation and management of recreation facilities at Site 7, Old Lock & Dam 50 and Site 8, Blackburn, Kentucky were signed 6 March 1985 by authority of the Assistant Secretary for Real Property, Office of the Secretary of the Army.

A license agreement, executed by the Illinois Department of Conservation for operation and maintenance of recreation facilities at Site 4, Lusk Creek (Old Lock & Dam 51) Illinois, was signed 6 March 1985 by authority of the Assistant Secretary for Real Property, Office of the Secretary of the Army.

A lease agreement executed by the Fiscal Court of Livingston County, Kentucky for operation and management of recreation facilities at Site 2, Birdsville, Kentucky was signed 4 August 1985 by authority of the Assistant Secretary for Real Property, Office of the Secretary of the Army.

It is expected that a lease agreement will be obtained from the Fiscal Court of Union County, Kentucky for operation and management of recreation facilities at Site 8A, Caseyville, Kentucky in time to award the construction contract as scheduled.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $275,600,000 is a decrease of $700,000 from the latest estimate ($276,300,000) presented to Congress (FY 86). This change includes decreases of $290,000 for adjustments in the estimated inflation allowance through the construction period and $410,000 for post contract award and other estimating adjustments made up of decreases of ($405,100) for economical contract prices for construction of the Blackburn, Lusk Creek, and Birdsville Boat Ramps, ($52,000) for elimination of supervision and inspection from estimated contract price for construction of the Caseyville Boat Ramp, ($40,000) for economical contract price for additional work on tainter gates, ($182,000) for reduced requirements for engineering and design and supervision and administration, and ($65,300) for savings on completed work, partially offset by increases of ($156,000) for lands and damages for court awards on condemned tracts, ($133,000) for new work consisting of demolition of existing buildings and resurfacing a access road at Lock and Dam 50 site, and ($45,400) for permanent operating equipment and miscellaneous items.

STATUS OF ENVIRONMENTAL IMPACT STATEMENTS AND COMPLIANCE WITH CLEAN WATER ACT: The final Environmental Impact Statement was filed with CEQ on 5 February 1971.

The provisions of Section 404 of the Clean Water Act have been met for construction of recreation facilities at Site 3, Givens Creek, Kentucky, by a Section 404(b)(1) Evaluation, a Public Notice issued on 14 October 1983, a Certification issued by the Commonwealth of Kentucky on 9 January 1984, and the District Engineer's signature on the Evaluation Report 10 January 1984.

The provisions of Section 404 of the Clean Water Act have been met for construction of recreation facilities at Site 1-A, Dyer Creek, Kentucky, by a Section 404(b)(1) Evaluation, a Public Notice issued on 10 May 1984, a Certification issued by the Commonwealth of Kentucky on 17 June 1984, and the District Engineer's signature on the Evaluation Report 29 June 1984.

The provisions of Section 404 of the Clean Water Act have been met for construction of recreational facilities at Site 7, Old lock and Dam 50, Kentucky, by a Section 404(b)(1) Evaluation, a Public Notice issued on 14 February 1984, a Certification issued by the Commonwealth of Kentucky on 16 March 1984, and the District Engineer's signature on the Evaluation Report on 2 April 1984.

The provisions of Section 404 of the Clean Water Act have been met for construction of recreation facilities at Site 8, Blackburn, Kentucky, by a Section 404(b)(1) Evaluation, a Public Notice issued on 19 November 1984, a Certification issued by the Commonwealth of Kentucky 4 January 1985, and the District Engineer's signature on the Evaluation Report, on 9 January 1985.

The provisions of Section 404 of the Clean Water Act have been met for construction of recreation facilities at Site 4, Lusk Creek, Illinois (Old Lock & Dam 51), by a Section 404(b)(1) Evaluation, a Public Notice issued on 10 April 1985, a Certification issued by the Illinois EPA on 3 June 1985, and the District Engineer's signature on the Evaluation Report on 21 June 1985.

The provisions of Section 404 of the Clean Water Act have been met for construction of recreation facilities at Site 2, Birdsville, Kentucky, by a Section 404(b)(1) Evaluation, a Public Notice issued on 29 May 1985, a Certification from the Commonwealth of Kentucky on 19 June 1985, and the District Engineer's signature on the Evaluation Report on 3 July 1985.

The provisions of Section 404 of the Clean Water Act are scheduled to be met for construction of recreation facilities at Site 8A, Caseyville, Kentucky, by a Section 404(b)(1) Evaluation, a Public Notice issued, a Certification from the Commonwealth of Kentucky, and the District Engineer's signature on the Evaluation Report, all in the 1st Quarter FY 86.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1966 and funds for construction in FY 1970.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: Ohio River
District: Louisville

Project: Smithland Locks and Dam, IL, IN and KY

| Item | Estimates Presented to Congress ($1,000) | | | | |
|---|---|---|---|---|---|
| | Original Baseline | Cumulative Changes | Last | Incremental Change | Current |
| Federal Cost<br>(Price Level) | 110,000<br>(Jul 1968) | | 276,500 1/ | | 275,800 1/2/ |
| Reason for Change: | | (166,500) 1/ | | (-700) 2/ | |
| a. Price Escalation | | 85,383 | | -290 | |
| b. Design Changes | | 27,096 | | | |
| c. Additional Function Added Under General Authorization | | 287 3/ | | | |
| d. Authorized Modification | | | | | |
| e. Post Contract Award and Other Estimating Adjustments | | 59,438 | | -410 | |
| f. Schedule Changes | | | | | |
| g. Sundry | | -8,951 4/ | | | |
| h. Real Estate | | 3,247 | | | |

1/ Includes an allowance for estimated inflation through the construction period.
2/ Includes -$290 for adjustments in the estimated inflation allowance through the construction period.
3/ For Preservation of Historical & Archeological Data Act of 1974 (PL 93-291).
4/ Includes reduction for lesser number of recreation sites to be developed by Corps, -$1,691; adjusted GSA rental -$28; increase in land deficiencies, $370; reanalysis of engineering and design, $457; deletion for requirement for reservoir clearing, -$2,036; miscellaneous underruns on Government-furnished materials, -$480; added water and sewer facilities, $12; seeding at locks, dam and roads, $335; additional work for service building, $14; reduction for repayment by utility district, -$200; excess to project needs of supervision and administration, -$3,360; and reduction for completed contract for locks, 1st stage dam, access road, and downstream lock approach, -$2,344.

REPORTS CONTROL SYMBOL: DAEN-CWB-13

| | |
|---|---|
| **APPROPRIATION TITLE:** CONSTRUCTION GENERAL | **CLASSIFICATION:** LOCKS AND DAMS (NAVIGATION) |

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM (a) | PROJECT COST ESTIMATE (b) | TOTAL TO 30 SEP 19 85 (c) | CURRENT FY 19 86 (d) | BUDGET FY 19 87 (e) | BALANCE TO COMPLETE AFTER FY 19 87 (f) |
|---|---|---|---|---|---|---|
| 1 | Lands and Damages | 11,231.0 | 11,047.5 | 183.5 | | |
| 2 | Relocations | 2,851.4 | 2,804.6 | 46.8 | | |
| 3 | Reservoirs | 734.8 | 734.8 | | | |
| 4 | Dam | 125,199.8 | 125,049.4 | 52.9 | 97.5 | |
| 5 | Locks | 95,463.7 | 95,463.7 | | | |
| 6 | Roads | 1,219.9 | 1,219.9 | | | |
| 7 | Channels and Canals | 13,317.9 | 13,317.9 | | | |
| 8 | Recreation Facilities | 5,660.4 | 1,166.6 | 2,355.3 | 425.5 | 1,686.0 |
| 9 | Buildings, Grounds and Utilities | 1,103.8 | 1,082.3 | 10.6 | 10.9 | |
| 10 | Permanent Operating Equipment | 675.3 | 675.3 | | | |
| 11 | Engineering and Design | 8,930.0 | 8,621.4 | 141.6 | 10.0 | 157.0 |
| 12 | Supervision and Administration | 9,412.0 | 8,910.9 | 290.0 | 21.1 | 190.0 |
| 13 | Total Applied Cost (CE Funds Only) | 275,800.0 | 270,094.3 | 3,080.7 | 592.0 | 2,033.0 |
| 14 | Undistributed Cost Constr Facilities | | +8.2 | | -8.2 | |
| 15 | Total Project Cost (CE Funds Only) | 275,800.0 | 270,102.5 | 3,080.7 | 583.8 | 2,033.0 |
| 16 | Pending Adjustments - None | | | | | |
| 17 | Total Cost (CE Funds Only) | 275,800.0 | 270,102.5 | 3,080.7 | 583.8 | 2,033.0 |
| 18 | Undelivered Orders | | +213.3 | -115.5 | -97.8 | |
| 19 | Total Obligations | | 270,315.8 | 2,965.2 | 486.0 | 2,033.0 |
| 20 | | | | | | |
| 21 | METHOD OF FINANCING: | | | | | |
| 22 | ALLOCATIONS | | 270,511.0 | 2,770.0 1/ | | |
| 23 | UNOBLIGATED CARRYOVER FROM PRIOR YEAR | | | 195.2 | | |
| 24 | TOTAL FUNDS AVAILABLE FOR OBLIGATION | | | 2,965.2 | | |
| 25 | APPROPRIATIONS REQUIRED | | | | 486.0 | 2,033.0 2/ |
| 26 | | | | | | |
| 27 | | | | | | |
| 28 | 1/ Reflects $300,000 reduction assigned as savings and slippage, and $370,000 transferred to project. | | | | | |
| 29 | 2/ Includes $2,033,000 for unscheduled work. | | | | | |
| 30 | | | | | | |
| 31 | | | | | | |
| 32 | | | | | | |
| 33 | | | | | | |

| | | | |
|---|---|---|---|
| EFFECTIVE DATE<br>1 JAN 86 | DIVISION OHIO RIVER<br>DISTRICT LOUISVILLE | REGION OHIO<br>BASIN OHIO-MAIN STEM | PROJECT<br>SMITHLAND LOCKS AND DAM, ILLINOIS INDIANA AND KENTUCKY |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986

**APPROPRIATION TITLE:** Construction, General - Locks and Dams (Navigation)

**PROJECT:** Grays Landing Lock and Dam (Lock and Dam 7), Monongahela River, Pennsylvania, (Engineering and Design and Land Acquisition) (Continuing)

**LOCATION AND DESCRIPTION:** Lock and Dam 7 is located on the left bank of the Monongahela River, 85.0 miles above the mouth of the river at the "Point" in Pittsburgh, PA. The site of the proposed lock and dam is on the Monongahela River, 82.0 miles above its mouth at Pittsburgh, PA and is in Fayette and Greene Counties, PA. The project will consist of the replacement of the existing 56' x 360' lock and fixed crest dam with a modern 84' x 720' lock and a non-navigable, fixed crest dam.

**AUTHORIZATION:** Supplemental Appropriation Act, 1985 for Engineering and Design and Land Acquisition.

**BENEFIT TO COST RATIO:** The benefit to cost ratio is 2.8 to 1 at 8-1/8% interest. The benefit to cost ratio is based on the replacement projects, Grays Landing Lock and Dam for Lock and Dam 7, and the Point Marion Lock for Lock 8, being in place.

## SUMMARIZED FINANCIAL DATA

| | | |
|---|---|---|
| Estimated Federal Cost | | $121,000,000 |
| General Appropriations | $60,500,000 | |
| Inland Waterways Trust Funds | 60,500,000 | |
| Estimated Non-Federal Cost | | 1,750,000 |
| Other Costs | 1,750,000 | |
| Total Estimated Project Cost | | $122,750,000 |

Division: Ohio

District: Pittsburgh, PA

Region: Ohio

Grays Landing Lock and Dam (Lock and Dam 7), Monongahela River, PA

4 FEB 1986

BENEFIT TO COST RATIO (cont):

|  | General Appropriations | Inland Waterways Trust Fund | Accumulated Percentage of Estimated Federal Cost |
|---|---|---|---|
| Allocations to 30 September 1985 | $ [illegible] | $ [illegible] |  |
| Conference Allowance for FY 1986 | [illegible] | [illegible] |  |
| Allocation for FY 1986 | [illegible] | [illegible] |  |
| Allocations through FY 1986 | [illegible] | [illegible] | [illegible] |
| Allocation Requested for FY 1987 | [illegible] 1/ | [illegible] | [illegible] |
| Scheduled Balance to Complete after FY 1987 | [illegible] | [illegible] |  |
| Unscheduled Balance to Complete after FY 1987 | [illegible] | [illegible] |  |

1/ Obligation and expenditure of the budgeted funds for this project are contingent upon legislation increasing the amount of revenue derived from taxes on fuels used by vessels engaged in commercial waterway transportation in accordance with the agreement between the Administration and the Senate Majority leadership.

| STATUS: (1 January 1986) | Percent Complete | Completion Schedule |
|---|---|---|
| Entire Project | [illegible] | Indefinite |

PHYSICAL DATA

Lock:

Single Lock Chamber 84 feet wide x 720 feet long

Dam:

Fixed Crest Concrete Gravity Dam, [illegible] feet long.

Land and Damages:

Fee = [illegible] acres
Road Easements = [illegible] acres
Flowage Easements = [illegible] acres
Temp. Work Area Easements = [illegible] acres
Bank Stabilization Easements = [illegible] acres
Type: Lock Site = residential and industrial
Pool Area = riverbank and [illegible]

Lift:

[illegible] feet (Lift), existing [illegible] pool at elev [illegible] would be shortened by [illegible] miles. Existing pool 7 at elev [illegible] would be extended down river to the new dam.

JUSTIFICATION: Construction of the Grays Landing Lock and Dam is an integral part of the plan of improvement of the Monongahela River for orderly replacement of old and obsolete navigation facilities. Lock and Dam 7, which was constructed during the period 1923-1926, is near the end of its economic life and is obsolete. In addition to its overall deteriorated physical condition and poor operating condition, the existing 56' x 360' lock is inadequate to efficiently pass the present and prospective volume of traffic. Recent trends in the towing industry have been toward utilization of larger tows in line with the capacity provided by the new larger facilities on the upstream and downstream portions of the Monongahela River Navigation System. Passage of larger tows through Lock 7 requires that they be separated into segments that necessitate two or more lockages. This breaking up of tows results in costly delays and increases the possibility of accidents.

Since this lock structure was not designed to pass the present type of traffic and with the increasing volume of commerce adding to the problem every year, the structural deterioration is progressing at an accelerated rate. This will result, in the very near future, in numerous and severe breakdowns of the facility. The resulting interruptions to traffic to make such repairs will pyramid delays to navigation to the point of creating an intolerable condition.

The project will consist of the replacement of the existing 56' x 360' lock and fixed crest dam (Lock and Dam 7, Monongahela River, PA) with a modern 84' x 720' lock and a non-navigable, fixed crest dam.

The average annual navigation benefits of $62,400,000 were derived by determining the savings to shippers using the waterway and the estimated traffic that would use the waterway, where the savings to shippers shall be construed to mean the differences between (a) the freight rates or charges prevailing at the time of the study for this movement by the alternative means (rail and/or truck) and (b) those which would be charged on the proposed waterway. The benefits were derived in Appendix J, Locks and Dams 7 and 8, Feasibility Study, Interim Report dated January 1984. These benefits were updated to October 1985 by use of the DRI barge rate index. To fully attain all of navigation's average annual benefits, the replacement of Lock and Dam 7 (Grays Landing Lock and Dam) and Lock 8 (Point Marion Lock) must be in place. Therefore, the benefits indicated are for both projects. The total average annual cost of $21,906,000 was calculated using a first cost of $182,850,000 for the replacement of both structures.

The project is located within Greene and Fayette Counties, Pennsylvania, which have been designated as redevelopment areas by the Secretary of Commerce on the basis of substantial and persistent unemployment.

JUSTIFICATION (cont):

Waterborne commerce passing through the Grays Landing Lock site:

| YEAR | TONNAGE |
|---|---|
| 1981 | 7,937,000 |
| 1982 | 10,459,000 |
| 1983 | 9,582,000 |
| 1984 | 11,339,000 |
| 1985 (Projection) | 10,000,000 |

FISCAL YEAR 1987: The requested amount will be applied as follows:

| | |
|---|---|
| Engineering and Design | $600,000 |
| Supervision and Administration | 70,000 |
| Total | $670,000 |

NON-FEDERAL COSTS: In accordance with the agreement between the administration and the Senate Majority leadership, 50% of the total cost of construction will be derived from the Inland Waterways Trust Fund.

STATUS OF LOCAL COOPERATION: None required.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $121,000,000 is an increase of $26,700,000 over the latest estimate ($94,300,000 October 1983) presented to Congress (FY 1985). This change includes an increase of $11,090,000 for design changes consisting of changes to the cofferdams and firm rock depth (+$6,650,000); firm rock being lowered from the elevation set in the Feasibility Report using criteria available at that time, more detailed soils data affecting bank excavation slopes - flattening them from 1 on 2 to 1 on 3 for stability purposes, and criteria changes affecting the design of the cofferdam and chamber paving (+$5,800,000); design change requiring dredging at the existing Lock and Dam 7 site after the lock and dam are removed (+$300,000); and change in design of the highway crossing over Jacobs Creek on the right bank 1.1 miles up river from the Grays Landing site (-$1,660,000); and an increase of $16,460,000 for post contract award and other estimating adjustments consisting of adjusted quantities and unit prices and more detailed analysis of the work required. This increase was offset by a decrease of -$850,000 for real estate due to a more precise definition of land areas to be acquired and the costs thereof (+$2,350,000); an increase in land acquisition required for the additional upstream approach right bank excavation to improve navigation conditions (+$550,000); and the change of the adjustments to the Warwick Coal Mine Loading Dock from a Federal to a non-Federal cost (-$3,750,000).

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT:

EIS: A final EIS on the replacement of existing Lock and Dam 7 by the construction of a new lock and dam 3.0 miles downstream at Grays Landing, Pennsylvania was filed with EPA on 3 August 1984. Subsequent engineering studies recommended a realignment of the new lock and dam project to provide safer and more efficient approach conditions. The points of concern not addressed in the final EIS have been clarified in a Supplemental Information Report (SIRj includd as a part of the project's GDM. The SIR will be filed with EPA after approval of the GDM in the second quarter, FY 86.

Section 404: The provisions of Section 404 of the Clean Water Act will be met with the submission of the EIS, including a Section 404(b)(1) Evaluation, and a Supplemental Information Report to Congress in the third quarter, FY 86, and will require a subsequent appropriation or authorization action on this project by Congress.

OTHER INFORMATION: Funds for Engineering and Design were allocated in FY 1986 under the General Investigations appropriation.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

| Item | Estimates Presented to Congress ($1,000)<br>Original Baseline (1) | Cumulative Changes (2) | Last (3) | Incremental Change (4) | Current (5) |
|---|---|---|---|---|---|
| Federal Cost (Price Level) | $ 94,300 1/<br>(Oct 83) | | $ 94,300 1/ | | $121,000 1/ |
| Reason for Change | | | | ($26,700) | |
| a. Price Escalation | | | | 0 | |
| b. Design Changes | | | | $11,090 | |
| c. Additional Function Added Under General Authorization | | | | 0 | |
| d. Authorized Modification | | | | 0 | |
| e. Post Contract Award and Other Estimating Adjustments | | | | $16,460 | |
| f. Schedule Changes | | | | 0 | |
| g. Sundry | | | | 0 | |
| h. Real Estate | | | | -850 | |

1/ Excludes inflation through the construction period.

REPORTS CONTROL SYMBOL:

| | |
|---|---|
| APPROPRIATION TITLE: CONSTRUCTION GENERAL | CLASSIFICATION: LOCKS AND DAMS (NAVIGATION) |

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19___ AND 19___

| LINE NO | ITEM (a) | PROJECT COST ESTIMATE (b) | TOTAL TO 30 SEP 19 85 (c) | CURRENT FY 19 86 (d) | BUDGET FY 19 87 (e) | BALANCE TO COMPLETE AFTER FY 19 87 (f) |
|---|---|---|---|---|---|---|
| 1 | Lands and Damages | 6,750,000 | | | | 6,750,000 |
| 2 | Relocations | 3,340,000 | | | | 3,340,000 |
| 3 | Reservoirs | 2,400,000 | | | | 2,400,000 |
| 4 | Dams | 24,540,000 | | | | 24,540,000 |
| 5 | Locks | 69,400,000 | | | | 69,400,000 |
| 6 | Channels | 300,000 | | | | 300,000 |
| 7 | Cultural Resources Preservation | 200,000 | | | | 200,000 |
| 8 | Buildings, Grounds, and Utilities | 1,290,000 | | | | 1,290,000 |
| 9 | Permanent Operating Equipment | 180,000 | | | | 180,000 |
| 10 | Engineering and Design | 6,680,000 | | 575,000 | 600,000 | 5,505,000 |
| 11 | Supervision and Administration | 5,920,000 | | 65,000 | 70,000 | 5,785,000 |
| 12 | Total Cost | 121,000,000 | | 640,000 | 670,000 | 119,690,000 |
| 13 | Federal Funds | | | | | |
| 14 | General Appropriations | | | | | |
| 15 | Total Cost | 60,500,000 | | 640,000 | 670,000 | 59,190,000 |
| 16 | Undelivered Orders | | | | | |
| 17 | Total Obligations | | | 640,000 | 670,000 | 59,190,000 |
| 18 | Inland Waterways Trust Funds | | | | | |
| 19 | Total Cost | 60,500,000 | | | | 60,500,000 |
| 20 | Undelivered Orders | | | | | |
| 21 | Total Obligations | | | | | 60,500,000 |
| 22 | Method of Financing | | | | | |
| 23 | Federal Funds | | | | | |
| 24 | General Appropriations | | | | | |
| 25 | Allocations | | | 640,000 | | |
| 26 | Unobligated Carryover from Prior Year | | | | | |
| 27 | Total Funds Available for Obligation | | | 640,000 | | |
| 28 | Appropriation Required | | | | 670,000 | 59,190,000 |
| 29 | Inland Waterways Trust Fund | | | | | |
| 30 | Allocations | | | | | |
| 31 | Unobligated Carryover from Prior Year | | | | | |
| 32 | Total Funds Available for Obligation | | | | | |
| 33 | Appropriation Required | | | | | 60,500,000 |

| | | | |
|---|---|---|---|
| EFFECTIVE DATE<br>2 Jan 86 | DIVISION OHIO RIVER<br>DISTRICT PITTSBURGH | REGION OHIO<br>BASIN MONONGAHELA | PROJECT GRAYS LANDING LOCK AND DAM (LOCK AND DAM 7) MONONGAHELA RIVER, PENNSYLVANIA AND WEST VIRGINIA |

ENG FORM 1 SEP 70 2288 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986

APPROPRIATION TITLE: Construction, General - Locks and Dams (Navigation)

PROJECT: Point Marion Lock and Dam (Lock and Dam 8), Monongahela River, Pennsylvania and West Virginia (Engineering and Design and Land Acquisition) (Continuing)

LOCATION AND DESCRIPTION: Lock and Dam 8 is located on the left bank of the Monongahela River, 90.8 miles above the mouth of the river at the "Point" in Pittsburgh, PA. The project will consist of the replacement of the existing 56'x 360' lock with a modern 84'x 720' lock.

AUTHORIZATION: Supplemental Appropriation Act, 1985 for Engineering and Design and Land Acquisition.

BENEFIT TO COST RATIO: The benefit cost ratio is 2.8 to 1 at 8-1/8% interest. The benefit to cost ratio is based on the replacement projects, Grays Landing Lock and Dam for Lock and Dam 7, and the Point Marion Lock for Lock 8, being in place.

## SUMMARIZED FINANCIAL DATA

| | | |
|---|---|---|
| Estimated Federal Cost | | $70,100,000 |
| General Appropriations | $35,050,000 | |
| Inland Waterways Trust Funds | 35,050,000 | |
| Estimated Non-Federal Cost | | 0 |
| Total Estimated Project Cost | | $70,100,000 |

| | General Appropriations | | Inland Waterways Trust Fund | Accumulated Percentage of Estimated Federal Cost |
|---|---|---|---|---|
| Allocations to 30 September 1985 | $ 0 | | $ 0 | |
| Conference Allowance for FY 1986 | 660,000 | | 0 | |
| Allocation for FY 1986 | 660,000 | | 0 | |
| Allocations through FY 1986 | 660,000 | | 0 | 1 |
| Allocation Requested for FY 1987 | 730,000 | 1/ | 0 | 2 |
| Scheduled Balance to Complete After 1987 | 2,300,000 | | 0 | |
| Unscheduled Balance to Complete After 1987 | 31,360,000 | | 35,050,000 | |

1/ Obligation and expenditure of the budgeted funds for this project are contingent upon legislation increasing the amount of revenue derived from taxes on fuels used by vessels engaged in commercial waterway transportation in accordance with the agreement between the Administration and the Senate Majority leadership.

Region: Ohio

Division: Ohio District: Pittsburgh, PA Point Marion Lock and Dam (Lock and Dam 8), Monongahela River, PA & WV

6 FEB 1986

STATUS: 31 January 1984

Entire Project

PERCENT COMPLETE

[illegible]

COMPLETION SCHEDULE

Indefinite

PHYSICAL DATA

LOCKS:

New chamber 84' x 720'
Existing 56' x 360'
  chamber is to be removed.

DAM:

Existing movable crest dam to remain.
No change in pool elevations.

REAL ESTATE:

47 Acres - Unimproved land - lock site.

JUSTIFICATION:

Commerce: Construction of the Point Marion Lock is an integral part of the plan of improvement of the Monongahela River for orderly replacement of old and obsolete navigation facilities. Lock 8, constructed during the period 1923-1926 (the dam was reconstructed in 1958-1959 to provide a movable crest and raise the pool by four feet), is obsolete and near the end of its economic life. In addition to the overall deteriorated physical condition and poor operating conditions, the existing 56'x 360' lock is inadequate to efficiently pass the present and prospective volume of traffic. Recent trends in the towing industry have been toward utilization of larger tows to take full capacity provided by the new larger facilities on the upstream and downstream portions of the Monongahela River Navigation system. Passage of larger tows through the locks require that they be separated into segments that necessitate two or more lockages. This breaking up of tows results in costly delays and increases the possibility of accidents.

Since this lock structure was not designed to pass the present type of traffic and with the increasing volume of commerce adding to the problem every year, the structural deterioration is progressing at an accelerated rate. This will result, in the very near future, in numerous and severe breakdowns of the facilities. The resulting interruptions to traffic to make such repairs will present delays to navigation to the point of creating an intolerable condition.

The average annual navigation benefits of [illegible] were derived by determining the savings in shipments using the waterway and the estimated traffic that would use the waterway, where the savings in shipments shall be construed to mean the differences between (a) the freight rates or charges prevailing at the time of the study for this movement by the

JUSTIFICATION: (cont)

alternative means (rail and/or truck) and (b) those which would be charged on the proposed waterway. The benefits were derived in Appendix J, Locks and Dams 7 and 8, Feasibility Study, Interim Report dated January 1984. These benefits were updated to October 1985 by use of the DRI barge rate index. To fully attain all of navigation's average annual benefits, the replacement of Lock and Dam 7 (Grays Landing Lock and Dam) and Lock 8 (Point Marion Lock) must be in place. Therefore, the benefits indicated are for both projects. The total average annual cost of $21,906,000 was calculated using a first cost of $192,850,000 for the replacement of both structures.

The project is located within Greene and Fayette Counties, Pennsylvania, which have been designated as redevelopment areas by the Secretary of Commerce on the basis of substantial and persistent unemployment.

Waterborne Commerce passing through the Point Marion Lock site:

| Year | Tonnage |
|---|---|
| 1981 | 6,936,000 |
| 1982 | 8,938,000 |
| 1983 | 8,571,000 |
| 1984 | 9,968,000 |
| 1985 (Projection) | 10,000,000 |

FISCAL YEAR 1987: The requested amount will be applied as follows:

| | |
|---|---|
| Engineering and Design | $630,000 |
| Supervision and Administration | $100,000 |
| TOTAL | $730,000 |

NON-FEDERAL COSTS: In accordance with the agreement between the Administration and the Senate Majority leadership, 50% of the total cost of construction will be derived from the Inland Waterways Trust Fund.

STATUS OF LOCAL COOPERATION: None required.

4 FEB 1986

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $70,100,000 is an increase of $2,600,000 over the latest estimate (67,500,000 Oct 83) presented to Congress (FY 1985). This increase is due to price level increase from 1 October 1983 to 1 October 1985.

## STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT:

EIS: A final EIS on the addition of a new larger lock landward of existing Lock 8 was filed with EPA on 3 August 1984.

Section 404: The provisions of Section 404 of the Clean Water Act will be met with the submission of an EIS, including a Section 404(b)(1) Evaluation, to Congress in the third quarter, FY 86, and will require a subsequent appropriation or authorization action on this project by Congress.

OTHER INFORMATION: Funds for Engineering and Design were allocated in FY 1986 under the General Investigations Appropriation.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: Ohio River
District: Pittsburgh

Project: Point Marion Lock and Dam (Lock and Dam 8),
Monongahela River, PA & WV

| Item | Estimates Presented to Congress ($1,000) | | | | |
|---|---|---|---|---|---|
| | Original Baseline (1) | Cumulative Changes (2) | Last (3) | Incremental Change (4) | Current (5) |
| Federal Cost (Price Level) | $67,500 1/<br>(Oct 83) | | $67,500 1/<br>(Oct 83) | | $70,100 1/ |
| Reason for Change | | | | | |
| a. Price Escalation | | | | ($2,600)<br>$2,595 | |
| b. Design Changes | | | | | |
| c. Additional Function Added Under General Authorization | | | | | |
| d. Authorized Modification | | | | | |
| e. Post Contract Award and Other Estimating Adjustments | | | | | |
| f. Schedule Changes | | | | | |
| g. Sundry | | | | | |
| h. Real Estate | | | | $5 | |

1/ Excludes inflation through the construction period.

REPORTS CONTROL SYMBOL:

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: LOCKS AND DAMS (NAVIGATION)

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19____ AND 19____

| LINE NO | ITEM (a) | PROJECT COST ESTIMATE (b) | TOTAL TO 30 SEP 19 85 (c) | CURRENT FY 19 86 (d) | BUDGET FY 19 87 (e) | BALANCE TO COMPLETE AFTER FY 19 87 (f) |
|---|---|---|---|---|---|---|
| 1 | Lands and Damages | 105,000 | | | | 105,000 |
| 2 | Reservoirs | 2,080,000 | | | | 2,080,000 |
| 3 | Locks | 60,620,000 | | | | 60,620,000 |
| 4 | Buildings, Grounds and Utilities | 860,000 | | | | 860,000 |
| 5 | Permanent Operating Equipment | 75,000 | | | | 75,000 |
| 6 | Engineering and Design | 3,180,000 | | 575,000 | 630,000 | 1,975,000 |
| 7 | Supervision and Administration | 3,180,000 | | 85,000 | 100,000 | 2,995,000 |
| 8 | Total Cost | 70,100,000 | | 660,000 | 730,000 | 68,710,000 |
| 9 | Federal Funds | | | | | |
| 10 | General Appropriations | | | | | |
| 11 | Total Cost | 35,050,000 | | 660,000 | 730,000 | 33,660,000 |
| 12 | Undelivered Orders | | | | | |
| 13 | Total Obligations | | | 660,000 | 730,000 | 33,660,000 |
| 14 | Inland Waterways Trust Funds | | | | | |
| 15 | Total Cost | 35,050,000 | | | | 35,050,000 |
| 16 | Undelivered Orders | | | | | |
| 17 | Total Obligations | | | | | 35,050,000 |
| 18 | | | | | | |
| 19 | Method of Financing | | | | | |
| 20 | Federal Funds | | | | | |
| 21 | General Appropriations | | | | | |
| 22 | Allocations | | | 660,000 | | |
| 23 | Unobligated Carryover From Prior Year | | | | | |
| 24 | Total Funds Available For Obligation | | | 660,000 | | |
| 25 | Appropriation Required | | | | 730,000 | 33,660,000 |
| 26 | Inland Waterways Trust Fund | | | | | |
| 27 | Allocations | | | | | |
| 28 | Unobligated Carryover From Prior Year | | | | | |
| 29 | Total Funds Available For Obligation | | | | | |
| 30 | Appropriation Required | | | | | 35,050,000 |
| 31 | | | | | | |
| 32 | | | | | | |
| 33 | | | | | | |

| | | | |
|---|---|---|---|
| EFFECTIVE DATE<br>2 Jan 86 | DIVISION OHIO RIVER<br>DISTRICT PITTSBURGH | REGION OHIO<br>BASIN MONONGAHELA | PROJECT POINT MARION LOCK AND DAM<br>(LOCK AND DAM 8)<br>MONONGAHELA RIVER, PENNSYLVANIA |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986

APPROPRIATION TITLE: Construction, General - Locks and Dams (Navigation)

PROJECT: Gallipolis Locks and Dam, WV & OH (Continuing)

LOCATION: Gallipolis Locks and Dams is situated in the Middle Ohio Valley at Ohio River mile 279.2, about 14 miles downstream from the mouth of the Kanawha River in West Virginia and about 30 miles upstream from the City of Huntington, West Virginia. The new locks would be in Mason County, West Virginia; the abutment of the dam is in Gallia County, Ohio.

AUTHORIZATION: Supplemental Appropriation Act, 1985.

BENEFIT TO COST RATIO: The remaining benefit-remaining cost ratio is 11.8 to 1 at 8-1/8% interest rate. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1985) was 11.3 to 1. The benefit-cost ratio is based on the projects fair share of system benefits in the Ohio River Basin System.

SUMMARIZED FINANCIAL DATA

| | | |
|---|---|---|
| Estimated Federal Cost | | $353,000,000 |
| General Appropriations | 176,500,000 | |
| Inland Waterway Trust Funds | 176,500,000 | |
| Estimated Non-Federal Cost | | 0 |
| Total Estimated Project Cost | | $353,000,000 |

| | General Appropriations | Inland Waterway Trust Fund | Accum. % of Est. Fed. Cost |
|---|---|---|---|
| Allocations to 30 September 1985 | $ 95,000 | $ 0 | |
| Conference Allowance for FY 1986 | 0 | 0 | |
| Potential Allocation for FY 1986 | 2,155,000 | 2,250,000 | |
| Potential Allocations thru FY 1986 | $ 2,250,000 | $ 2,250,000 | 1 |
| Allocation Requested for FY 1987 | 3,500,000 1/ | 3,500,000 1/ | 3 |
| Scheduled Balance to Complete after FY 1987 | 170,750,000 | 170,750,000 | |
| Unscheduled Balance to Complete after FY 1987 | 0 | 0 | |

1/ Obligation and expenditure of the budgeted funds for construction of this project are contingent upon legislation increasing the amount of revenue derived from taxes imposed on fuels used by vessels engaged in commercial waterway transportation in accordance with the agreement between the Administration and the Senate Majority Leadership.

DIVISION: OHIO RIVER DISTRICT: HUNTINGTON REGION: OHIO

4 FEB 1986

Gallipolis Locks & Dams, Ohio River

| STATUS: (1 January 1986) | PERCENT COMPLETE | COMPLETION SCHEDULE |
|---|---|---|
| Lands and Damages | 0 | Sep 1990 |
| Relocations | 0 | Dec 1987 |
| Dam | 0 | Jul 1995 |
| Locks | 0 | Dec 1991 |
| Cultural Resources Pres. | 0 | Sep 1987 |
| Bldgs, Grounds & Util | 0 | Dec 1991 |
| Perm Oper Equip | 0 | Sep 1991 |
| Entire Project | 0 | Jul 1995 |

## PHYSICAL DATA

**Bypass Canal:**
Length - 1.7 miles
Bottom Width - 500 feet (minimum)

**Locks:** Number - 2
Main Lock - 110 ft. x 1,200 ft.
Auxiliary Lock - 110 ft. x 600 ft.
Normal Lift - 23 ft.

**Dam:**
Major rehabilitation of the existing navigation dam to include replacing the dam roller gates, strengthening the foundation and adding an emergency bulkhead closure system.

**Lands and Damages:**

| | |
|---|---|
| Total existing easement area, acres | 1,798 |
| Required for existing Locks & Dam, acres | 82 |
| Additional required for new locks & canal, acres | 553 |
| Additional required for mitigation, acres | 840 |

No residential structures are located in the affected area

**JUSTIFICATION:** Construction of the project will eliminate a severe navigation hazard on the Ohio River and will permit safe and efficient transportation through the project itself as well as complete a series of 1200' x 110' locks from near Pittsburgh to Smithland Locks and Dam at River Mile 918.5. Reduced delays and transportation costs will benefit directly and indirectly the economy of the nation.

Annual transportation benefits of $170,000,000 (8-1/8%) are estimated for the project. Although commodity traffic at Gallipolis fell sharply in 1982 and 1983, 1984 traffic rebounded significantly and it is not unreasonable to expect the traffic levels at Gallipolis to follow the trend predicted in the authorization document. Those trends forecast a major congestion problem (approximately 30 hours delay per tow) by the year 1990. Commodity traffic projections reflect 64.5, 75.0 and 93.5 million tons transiting the project in 1990, 2000 and 2020, respectively. Two other important factors bearing on the need to modernize Gallipolis are its age and condition and safety considerations. Gallipolis is over 50 years old and is becoming increasingly difficult to operate and maintain. Lock outages are a major problem now and will become very critical in the future. It is well documented that the existing project is unsafe.

As the project is strategically located between the highly industrialized upper Ohio River Basin area and its product markets and supply regions, Gallipolis captures a significant portion of the commodities transiting the Ohio River. Consequently, the economy of the region and the nation itself will benefit by its construction.

The Secretary of Commerce on the basis of substantial and persistent unemployment has designated Mason County, West Virginia, as being eligible for employment benefits. However, redevelopment benefits have not been used as the basis for plan formulation. The project is within the Appalachian Region. Average annual benefits for the project are estimated at $170,146,000.

| Benefits | Amount (1 October 1985) | Benefits | Amount (1 October 1985) | | |
|---|---|---|---|---|---|
| Navigation | $170,000,000 | Recreation | $146,000 | Total Benefits | $170,146,000 |

FISCAL YEAR 1987: The requested amount will be applied as follows:

| | |
|---|---|
| Continue land acquisition | $2,050,000 |
| Initiate relocations | 150,000 |
| Continue cultural resources preservation | 2,100,000 |
| Engineering and Design | 2,200,000 |
| Supervision and Administration | 500,000 |
| TOTAL | $7,000,000 |

The funds requested are required to initiate construction during the budget year.

NON-FEDERAL COSTS: In accordance with the agreement between the Administration and the Senate Majority Leadership, 50 percent of the total costs of construction will be derived from Inland Waterways Trust Fund.

The West Virginia Department of Natural Resources will be responsible for operation and management of mitigation lands at an estimated average annual cost of $50,000.

STATUS OF LOCAL COOPERATION: The West Virginia Department of Natural Resources by letter dated 29 January 1981 agreed to assume responsibility for operation and management of the mitigation area.

**COMPARISON OF FEDERAL COST ESTIMATES:** The current Federal cost estimate of $353,000,000 is an increase of $28,000,000 over the latest estimate ($325,000,000, Oct 1983) presented to Congress (FY 1985). This increase consists of an increase of $40,600,000 to adjust the estimate for inflation through the construction period partially offset by a decrease of $12,600,000 under post-contract award and other estimating adjustments consisting of ($7,950,000) in Engineering and Design and ($4,650,000) in Supervision and Administration both based on reanalysis of remaining requirements.

**STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT:** The Final Environmental Statement was filed with EPA on 8 January 1981. The provisions of Section 404 of the Clean Water Act will be met with the submission of the EIS and a Section 404(b)(1) Evaluation to Congress by the 2nd Qtr of FY 1986.

**OTHER INFORMATION:** Funds to prepare plans and specifications for the locks and access channel were allocated in FY 1984 ($100,000) and FY 1985 ($1,700,000) under the General Investigations appropriation. Funds to initiate construction were appropriated in FY 1985.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

**Division:** Ohio River
**District:** Huntington

**Project:** Gallipolis Locks & Dam, WV & OH

| | Estimate Presented to Congress ($1,000) | | | | |
|---|---|---|---|---|---|
| Item | Original Baseline | Cumulative Changes | Last | Incremental Change | Current |
| Federal Cost (Price Level) | 325,000 (Oct 83) | | 325,000 (Oct 83) | | 353,000 1/ |
| Reasons for Change: | | (0) | | (28,000) | |
| a. Price Escalations | | | | 40,600 1/ | |
| b. Design Changes | | | | | |
| c. Additional Function Added Under General Authorization | | | | | |
| d. Authorized Modification | | | | | |
| e. Post-Contract Award and Other Estimating Adjustments | | | | -12,600 2/ | |
| f. Schedule Changes | | | | | |
| g. Sundry | | | | | |
| h. Real Estate | | | | | |

1/ Includes an allowance for estimated inflation through the construction period.

2/ Consists of decreases of $7,950 in E&D and $4,650 in S&A.

REPORTS CONTROL SYMBOL: DAEN-CWB-13

| APPROPRIATION TITLE: CONSTRUCTION GENERAL | CLASSIFICATION: LOCKS AND DAMS (NAVIGATION) |
|---|---|

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM | PROJECT COST ESTIMATE | TOTAL TO 30 SEP 19 85 | CURRENT FY 1986 | BUDGET FY 1987 | BALANCE TO COMPLETE AFTER FY 19 87 |
|---|---|---|---|---|---|---|
| | (a) | (b) | (c) | (d) | (e) | (f) |
| 1 | LANDS AND DAMAGES | 4,830,000 | | 1,000,000 | 2,050,000 | 1,780,000 |
| 2 | RELOCATIONS | 260,000 | | | 150,000 | 110,000 |
| 3 | DAM | 70,300,000 | | | | 70,300,000 |
| 4 | LOCKS | 248,600,000 | | | | 248,600,000 |
| 5 | CULTURAL RESOURCES PRESERVATION | 2,500,000 | | 400,000 | 2,100,000 | |
| 6 | BUILDINGS, GROUNDS AND UTILITIES | 2,350,000 | | | | 2,350,000 |
| 7 | PERMANENT OPERATION EQUIPMENT | 3,250,000 | | | | 3,250,000 |
| 8 | ENGINEERING AND DESIGN | 9,800,000 | | 2,750,000 | 2,200,000 | 4,850,000 |
| 9 | Locks, Canal, Etc. | (5,600,000) | | (2,750,000) | (2,000,000) | (850,000) |
| 10 | Dam | (4,200,000) | | | (200,000) | (4,000,000) |
| 11 | SUPERVISION AND ADMINISTRATION | 11,110,000 | | 350,000 | 500,000 | 10,260,000 |
| 12 | Locks, Canal, Etc. | (7,710,000) | | (350,000) | (480,000) | (6,880,000) |
| 13 | Dam | (3,400,000) | | | (20,000) | (3,380,000) |
| 14 | | | | | | |
| 15 | TOTAL APPLIED COST | 353,000,000 | | 4,500,000 | 7,000,000 | 341,500,000 |
| 16 | Undistributed Cost | | | | | |
| 17 | TOTAL PROJECT COST | 353,000,000 | | 4,500,000 | 7,000,000 | 341,500,000 |
| 18 | | | | | | |
| 19 | FEDERAL FUNDS | | | | | |
| 20 | GENERAL APPROPRIATIONS | | | | | |
| 21 | TOTAL COST | 176,500,000 | | 2,250,000 | 3,500,000 | 170,750,000 |
| 22 | UNDELIVERED ORDERS | | | | | |
| 23 | TOTAL OBLIGATIONS | | | 2,250,000 | 3,500,000 | 170,750,000 |
| 24 | INLAND WATERWAYS TRUST FUND | | | | | |
| 25 | TOTAL COST | 176,500,000 | | 2,250,000 | 3,500,000 | 170,750,000 |
| 26 | UNDELIVERED ORDERS | | | | | |
| 27 | TOTAL OBLIGATIONS | | | 2,250,000 | 3,500,000 | 170,750,000 |
| 28 | | | | | | |
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| | | | |
|---|---|---|---|
| EFFECTIVE DATE<br>JAN 1986 | DIVISION OHIO RIVER<br>DISTRICT HUNTINGTON | REGION OHIO<br>BASIN OHIO | PROJECT<br>GALLIPOLIS LOCKS AND DAM, WV & OH |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE.

4 FEB 1986

REPORTS CONTROL SYMBOL: DAEN-CWB-13

| | |
|---|---|
| APPROPRIATION TITLE: CONSTRUCTION GENERAL | CLASSIFICATION: LOCKS AND DAM (NAVIGATION) |

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM | PROJECT COST ESTIMATE | TOTAL TO 30 SEP 19 85 | CURRENT FY 19 86 | BUDGET FY 19 87 | BALANCE TO COMPLETE AFTER FY 19 87 |
|---|---|---|---|---|---|---|
| | (a) | (b) | (c) | (d) | (e) | (f) |
| 1 | METHOD OF FINANCING | | | | | |
| 2 | FEDERAL FUNDS | | | | | |
| 3 | GENERAL APPROPRIATIONS | | | | | |
| 4 | Allocations | | 95,000 | 2,155,000 | | |
| 5 | Unobligated Carryover from Prior Year | | | | | |
| 6 | Total Funds Available for Obligation | | | | | |
| 7 | APPROPRIATION REQUIRED | | | | 3,500,000 | 170,750,000 |
| 8 | INLAND WATERWAYS TRUST FUND | | | | | |
| 9 | Allocations | | | 2,250,000 | | |
| 10 | Unobligated Carryover from Prior Year | | | | | |
| 11 | Total Funds Available for Obligation | | | | | |
| 12 | APPROPRIATION REQUIRED | | | | 3,500,000 | 170,750,000 |
| 13 | | | | | | |
| 14 | | | | | | |
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| | | | |
|---|---|---|---|
| EFFECTIVE DATE JAN 1986 | DIVISION OHIO RIVER<br>DISTRICT HUNTINGTON | REGION OHIO<br>BASIN OHIO | PROJECT GALLIPOLIS LOCKS AND DAM, WV & OH |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986

APPROPRIATION TITLE: Construction, General - Locks and Dams (Navigation)

PROJECT: Winfield Locks and Dam, WV (Engineering and Design and Land Acquisition (Continuing)

LOCATION AND DESCRIPTION: Winfield Locks and Dam is situated in the Kanawha Valley at Kanawha River mile 31.1, about 31.1 miles upstream from the mouth of the Kanawha River in Putnam County, West Virginia. The new lock would be in Putnam County, West Virginia.

AUTHORIZATION: Supplemental Appropriation Act, 1985 for Engineering and Design and Land Acquisition.

BENEFIT - COST RATIO: The benefit-cost ratio is 6.2 to 1 at 8-1/8 percent. The benefit-cost ratio is based on the projects fair share of system benefits in the Kanawha River Basin System.

## SUMMARIZED FINANCIAL DATA

| | | |
|---|---|---|
| Estimated Federal Cost | | $128,000,000 |
| General Appropriations | 64,000,000 | |
| Inland Waterway Trust Fund | 64,000,000 | |
| Estimated Non-Federal Cost | | 0 |
| Total Estimated Project Cost | | $128,000,000 |

| | General Appropriations | Inland Waterways Trust Fund | Accum. % of Est. Fed. Cost |
|---|---|---|---|
| Allocations to 30 September 1985 | $ 0 | $ 0 | |
| Conference Allowance for FY 1986 | 0 | 0 | |
| Allocation for FY 1986 | 0 | 0 | |
| Allocations to Date | $ 0 | $ 0 | 0 |
| Allocation Requested for FY 1987 | 1,750,000 1/ | 0 | 1 |
| Scheduled Balance to Complete after FY 1987 | 3,950,000 | 0 | |
| Unscheduled Balance to Complete after FY 1987 | 58,300,000 | 64,000,000 | |

1/ Obligation and expenditure of the budgeted funds for this project are contingent upon legislation increasing the amount of revenue derived from taxes imposed on fuels used by vessels engaged in commercial waterway transportation in accordance with the agreement between the Administration and the Senate Majority Leadership.

DIVISION: OHIO RIVER

DISTRICT: HUNTINGTON

REGION: WEST VIRGINIA
Winfield Locks & Dam, Kanawha River

4 FEB 1986

| STATUS: (1 January 1986) | PERCENT COMPLETE | COMPLETION SCHEDULE |
|---|---|---|
| Entire Project | 0 | Indefinite |

## PHYSICAL DATA

Lock: Number - 1
Main Lock - 110 ft. x 800 ft.
Normal Lift - 28 ft.

| Lands and Damages: | |
|---|---|
| Total existing easement area, acres | 1,243 |
| Required for existing Locks & Dam, acres | 37 |
| Additional required for new lock, acres | 36 |
| Additional required for disposal, acres | 145 |
| Mobile home park (28 units) and 1 industry are located in the affected area | |

JUSTIFICATION: Construction of the project will provide safe and efficient transportation on the Kanawha River. Reduced delays and transportation costs will benefit directly and indirectly the economy of the nation.

Annual transportation benefits of $24,900,000 (8-1/8%) are estimated for the project. Winfield Locks and Dam traffic reached a level of 15.3 million tons in 1984, an increase of 2.3 million tons over 1980 levels. Winfield Locks and Dam is the most heavily used of the three Kanawha River projects and processed 87 percent of the total river traffic in 1980. Coal is the major waterborne commodity on the Kanawha River, accounting for nearly 60 percent of total tonnage.

Lockage problems are significant at Winfield. The average delay time was about 3.9 hours per tow in 1984 with an average of about 3.8 lockages per tow, making Winfield the most heavily used locks on the inland waterway system.

The estimated physical capacity of the existing locks at Winfield is about 20 million tons annually with no improvements, and about 27 million tons if nonstructural measures are implemented. Traffic projections indicate that traffic demands at Winfield could reach 24 million tons by year 2000 and 46 million tons by year 2050. Consequently, lock congestion and delays on the Kanawha River are expected to significantly increase over the next few decades as Winfield Locks rapidly approach capacity.

4 FEB 1986

Lockage delays represent a significant economic loss and with some commodities, particularly chemicals, traffic congestion at the locks could create a hazardous situation. Current needs at Winfield L&D are for lock chambers of sufficient size to handle present and projected traffic demands in a safe and efficient manner.

| Benefits | Amount (1 October 1985) | | |
|---|---|---|---|
| Navigation | $24,900,000 | Total Benefits | $24,900,000 |

FISCAL YEAR 1987: The requested amount will be applied as follows:

| | |
|---|---|
| Engineering and Design | 1,500,000 |
| Supervision and Administration | 250,000 |
| TOTAL | $1,750,000 |

The funds requested are required to complete Feature Design Memorandum and initiate plans and specifications during the budget year.

NON-FEDERAL COSTS: In accordance with the agreement between the Administration and the Senate Majority Leadership, 50 percent of the total costs of construction will be derived from Inland Waterways Trust Fund.

The West Virginia Department of Natural Resources will be responsible for operation and management of mitigation lands at an estimated average annual cost of $30,000.

STATUS OF LOCAL COOPERATION: The West Virginia Department of Natural Resources agreed in principal to assume responsibility for operation and management of the mitigation area.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $128,000,000 is an increase of $4,000,000 over the latest estimate ($124,000,000, Oct 1983) presented to Congress (FY 1985). The entire change is for price level increases.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The Final Environmental Statement will be filed with EPA in June 1986. The provisions of Section 404 of the Clean Water Act will be met with the submission of the EIS and a Section 404(b)(1) Evaluation to Congress by the 1st Qtr of FY 1987 and subsequent authorization action on this project by Congress.

OTHER INFORMATION: The feasibility study is underway and has not yet been approved.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

**Division:** Ohio River
**District:** Huntington

**Project:** Winfield Lock & Dam, WV

| Item | Estimate Presented to Congress ($1,000) | | | | |
|---|---|---|---|---|---|
| | Original Baseline | Cumulative Changes | Last | Incremental Change | Current |
| Federal Cost<br>(Price Level) | 124,000 (Oct 83) 1/ | | 124,000 (Oct 1983) 1/ | | 128,000 (Oct 85) 1/ |
| Reasons for Change: | | (0) | | (4,000) | |
| a. Price Escalations | | | | 4,000 | |
| b. Design Changes | | | | | |
| c. Additional Function Added Under General Authorization | | | | | |
| d. Authorized Modification | | | | | |
| e. Post-Contract Award and Other Estimating Adjustments | | | | | |
| f. Schedule Changes | | | | | |
| g. Sundry | | | | | |
| h. Real Estate | | | | | |

1/ Excludes inflation through the construction period.

REPORTS CONTROL SYMBOL: DAEN-CWB-13

| | |
|---|---|
| APPROPRIATION TITLE: CONSTRUCTION GENERAL | CLASSIFICATION: LOCKS AND DAM (NAVIGATION) |

## SUMMARY CONSTRUCTION PROGRAM (PB-1)
FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM (a) | PROJECT COST ESTIM[illegible] (b) | TOTAL TO 30 SEP 19 85 (c) | CURRENT FY 19 86 (d) | BUDGET FY 19 87 (e) | BALANCE TO COMPLETE AFTER FY 19 87 (f) |
|---|---|---|---|---|---|---|
| 1 | LANDS AND DAMAGES | 4,500,000 | | | | 4,500,000 |
| 2 | RELOCATIONS | 200,000 | | | | 200,000 |
| 3 | LOCKS | 107,200,000 | | | | 107,200,000 |
| 4 | CHANNELS | 400,000 | | | | 400,000 |
| 5 | BUILDINGS, GROUNDS, AND UTILITIES | 1,800,000 | | | | 1,800,000 |
| 6 | PERMANENT OPERATING EQUIPMENT | 1,500,000 | | | | 1,500,000 |
| 7 | ENGINEERING AND DESIGN | 8,000,000 | | | 1,500,000 | 6,500,000 |
| 8 | SUPERVISION AND ADMINISTRATION | 4,400,000 | | | 250,000 | 4,150,000 |
| 9 | | | | | | |
| 10 | TOTAL APPLIED COST | 128,000,000 | | | 1,750,000 | 126,250,000 |
| 11 | Undistributed Cost | | | | | |
| 12 | TOTAL PROJECT COST | 128,000,000 | | | 1,750,000 | 126,250,000 |
| 13 | | | | | | |
| 14 | FEDERAL FUNDS | | | | | |
| 15 | GENERAL APPROPRIATIONS | | | | | |
| 16 | TOTAL COST | 64,000,000 | | | 1,750,000 | 62,250,000 |
| 17 | UNDELIVERED ORDERS | | | | | |
| 18 | TOTAL OBLIGATIONS | | | | 1,750,000 | 62,250,000 |
| 19 | INLAND WATERWAYS TRUST FUND | | | | | |
| 20 | TOTAL COST | 64,000,000 | | | | 64,000,000 |
| 21 | UNDELIVERED ORDERS | | | | | |
| 22 | TOTAL OBLIGATIONS | | | | | 64,000,000 |
| 23 | | | | | | |
| 24 | | | | | | |
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| EFFECTIVE DATE<br>JAN 1986 | DIVISION OHIO RIVER<br>DISTRICT HUNTINGTON | REGION OHIO<br>BASIN KANAWHA | PROJECT<br>WINFIELD LOCKS & DAM, KANAWHA RIVER |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986

REPORTS CONTROL SYMBOL: DAEN-CWB-13

| | |
|---|---|
| APPROPRIATION TITLE: CONSTRUCTION GENERAL | CLASSIFICATION: LOCKS AND DAMS (NAVIGATION) |

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO. | ITEM | PROJECT COST ESTIMATE | TOTAL TO 30 SEP 19 85 | CURRENT FY 19 86 | BUDGET FY 19 87 | BALANCE TO COMPLETE AFTER FY 19 87 |
|---|---|---|---|---|---|---|
| | (a) | (b) | (c) | (d) | (e) | (f) |
| 1 | METHOD OF FINANCING | | | | | |
| 2 | FEDERAL FUNDS | | | | | |
| 3 | GENERAL APPROPRIATIONS | | | | | |
| 4 | Allocations | | | | | |
| 5 | Unobligated Carryover from Prior Year | | | | | |
| 6 | Total Funds Available for Obligation | | | | | |
| 7 | Appropriation Required | | | | 1,750,000 | 62,250,000 |
| 8 | INLAND WATERWAYS TRUST FUND | | | | | |
| 9 | Allocations | | | | | |
| 10 | Unobligated Carryover from Prior Year | | | | | |
| 11 | Total Funds Available for Obligation | | | | | |
| 12 | APPROPRIATION REQUIRED | | | | | 64,000,000 |
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|---|---|---|---|
| EFFECTIVE DATE<br>JAN 1986 | DIVISION OHIO RIVER<br>DISTRICT HUNTINGTON | REGION OHIO<br>BASIN KANAWHA | PROJECT<br>WINFIELD LOCKS & DAM, KANAWHA RIVER |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986

APPROPRIATION TITLE: Construction, General - Local Protection Projects (Flood Control)

PROJECT: Evansville, Indiana (Continuing)

LOCATION: Evansville is located in Vanderburgh County, Indiana, on the right bank of the Ohio River, 792.2 miles below Pittsburgh, Pennsylvania.

AUTHORIZATION: 1937 Flood Control Act

BENEFIT-COST RATIO: The remaining benefit-remaining cost ratio is 3.8 to 1 at 2-5/8 percent. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1938) was 3.1 to 1. The benefit-cost ratio is based on the project functioning independently.

| SUMMARIZED FINANCIAL DATA | | | Accum. % of Est. Fed. Cost |
|---|---|---|---|
| Estimated Federal Cost | | $ 49,800,000 | |
| Estimated Non-Federal Cost | | 7,630,000 | |
| Cash Contribution | $ 0 | | |
| Other Costs | 7,630,000 | | |
| Total Estimated Project Cost | | $ 57,430,000 | |
| Allocations to 30 September 1985 | | $ 28,466,000 | |
| Conference Allowance for FY 1986 | $ 2,800,000 | | |
| Allocation for FY 1986 | | 220,000 1/ | |
| Allocations to Date | | $ 28,686,000 | 59 |
| Allocation Requested for FY 1987 | | 4,500,000 | 69 |
| Scheduled Balance to Complete after FY 1987 | | $ 16,214,000 | |
| Unscheduled Balance to Complete after FY 1987 | | 0 | |

1/ Reflects $2,600,000 reduction assigned as savings and slippage and $20,000 transfer to the project.

| STATUS (1January 1986) | PERCENT COMPLETE | COMPLETION SCHEDULE |
|---|---|---|
| Lands and Damages | 100 | |
| Channels | 100 | |
| Levees and Floodwalls | | |
| Knight Township Section: | 100 | |
| Howell Section: | | |
| Unit 1 | 100 | |
| Unit 2 | 0 | Inactive |
| Pigeon Creek Section: | | |
| Unit 1 | 100 | |
| Unit 2 | 65 | Dec 1990 |
| Pumping Plants | | |
| Knight Township Section: | 100 | |
| Howell Section: | | |
| Unit 1 | 100 | |
| Unit 2 | 0 | Inactive |
| Pigeon Creek Section: | | |
| Unit 1 | 100 | |
| Unit 2 | 29 | Sep 1993 |

DIVISION: Ohio River DISTRICT: Louisville REGION: Ohio

## PHYSICAL DATA

The project is a system of earth levees, concrete floodwalls, pumping plants, and related items for the protection of Evansville, Indiana (1980 population - 129,667) from Ohio River floods 3 feet higher than the record flood of 1937. The project is divided into three sections, as follows:

**Knight Township Section**

| | |
|---|---|
| Earth Levee | 39,700 feet |
| Concrete Wall | 140 feet |
| Pumping Plants | 5 |

**Pigeon Creek Section: (Two Units)**

| | |
|---|---|
| Earth Levee | 23,025 feet |
| Concrete Wall | 9,733 feet |
| Pumping Plants | 11 |

**Howell Section: (Two Units)**

**Unit 1 (complete)**

| | |
|---|---|
| Earth Levee | 17,100 feet |
| Concrete Wall | 1,140 feet |
| Pumping Plants | 5 |

**Unit 2 (inactive)**

| | |
|---|---|
| Earth Levee | 2,400 feet |
| Concrete Wall | 2,760 feet |
| Pumping Plants | 3 |

**JUSTIFICATION:** The project, when completed, will protect the City of Evansville, Indiana, against Ohio River floods. Severe floods occurred in 1913, 1937, 1945 and 1964. In the 1937 flood, the maximum of record, flood damages in Evansville were estimated at $4,793,000. In 1945 flood damages in the city were estimated at $1,108,000. The Knight Township Section, although only partially complete at the time of the 1945 flood, provided some degree of protection to the overflow area in the eastern (upstream) section of the city. In 1964, flood damages were estimated at $977,300. The completed Knight Township and Howell Unit 1 Sections afforded partial protection to the city and prevented additional damages estimated at $3,339,000.

In recent years, considerable expansion of industry and housing has taken place and flood damages for a recurrence of the 1937 flood would be much higher. The city is served by railroads and highways and is an important communication route between north and south. The property to be protected by the project has a value in excess of $2,625,281,000 (October 1985 values). The average annual benefits, all flood control, are $5,490,000 based on 1 October 1985 price levels.

4 FEB 1985

FISCAL YEAR 1987: The requested amount will be applied as follows:

Pigeon Creek Section, Unit 2

| | | | |
|---|---|---|---|
| Continue construction of levees | $1,295,000 | Engineering and Design | $ 159,000 |
| Continue construction of North 1st Avenue, Diamond Avenue and Stringtown Road Pumping Plants | 2,640,000 | Supervision and Administration | 406,000 |
| | | Total | $4,500,000 |

The funds requested are required for construction during the budget year.

NON-FEDERAL COSTS: Local interests are required to (a) provide without cost to the United States all lands, easements, and rights-of-way necessary for construction of the project; (b) hold and save the United States free from damages due to the construction works; and (c) maintain and operate all works after completion in accordance with regulations prescribed by the Secretary of the Army.

The initial investment required for local interests in construction of the authorized project is estimated at $7,630,000 for lands and damages.

Local interests are required to maintain and operate the project upon completion. The average annual cost for operation and maintenance of the Pigeon Creek Section, Unit 2, levee and pumping plants, is estimated to be $30,000.

STATUS OF LOCAL COOPERATION: The City of Evansville, Indiana, by an ordinance passed by the Common Council of the city in 1938, indicated its intent to fulfill the requirements of local cooperation for flood protection. Under date of 7 April 1958, the Common Council of the city passed a resolution requesting early completion of the Riverside Drive Unit and the Pigeon Creek Section and giving assurances to fulfill the requirements of local cooperation.

The Evansville-Vanderburgh Levee Authority District executed formal assurances of local cooperation on 11 February 1963, which were accepted by the District Engineer on 20 February 1963. These assurances are considered applicable for Pigeon Creek Section Unit 2. Supplemental Assurances covering the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (PL 91-646) were received from the Levee Authority District on 16 July 1971 and accepted by the District Engineer on 23 July 1971.

Operation and maintenance of completed works is the responsibility of the Levee Authority District. Knight Township and Howell Section Unit 1 were transferred to the District in January 1949, Pigeon Creek Section Unit 1 was transferred in January 1967, and eleven gatewells added to existing drainage structures in Knight Township and Howell Section Unit 1 were transferred in May 1980.

Pigeon Creek Section - Unit 2, Part 1 - Pennsylvania Avenue to Cedar Street Levee and Floodwall and Dresden Street and Sixth Avenue pumping plants were transferred to the Evansville-Vanderburgh Levee Authority District for operation and maintenance in November 1980. Delaware Street pumping plant was transferred to the Evansville-Vanderburgh Levee Authority District for operation and maintenance in February 1983.

A $2,000,000 bond issue, to provide funds for purchase of rights-of-way for Pigeon Creek Unit 2, was approved by the City and County Councils, and the Indiana State Board of Commissioners in June 1971, and sold in August 1971. Authorization of-entry for Pigeon Creek Unit 2, Part 1 - Pennsylvania Avenue to Cedar Street was furnished 27 June 1973. Authorization-of-entry for 11 gatewells added to existing drainage structures, Knight Township and Howell Section Unit 1 was furnished 16 August 1976. Authorization-of-entry for Pigeon Creek Section, Unit 2, Part 2, Cedar Street to Stringtown Road with minor deficiencies was furnished 8 April 1981. Pigeon Creek Section, Unit 2, Part 2 was transferred to the Evansville - Vanderburgh Levee Authority District for operation and maintenance on 1 July 1985.

A second bond issue for $750,000 to provide funds to complete acquisition of rights-of-way for Pigeon Creek, Unit 2, Part 2 - Cedar Street to Stringtown Road and for purchase of rights-of-way for Part 3 - Stringtown Road to U.S. Highway 41 and for Part 4 - U.S. Highway 41 to Southern Railroad was approved by Evansville City Council in April 1980, the Vanderburgh County Council and the Indiana State Board of Tax Commissioners in May 1980 and sold in May 1980.

Pigeon Creek Section, Unit 2, Part 3, Stringtown Road to U.S. Highway 41 alignment has been changed and the new rights-of-way requirements incorporating these changes have been provided to the Evansville-Vanderburgh Levee Authority District. The attorney for the Levee Authority advised that it appears adequate funds are available for land acquisition for this section of the project. Acquisition is underway.

A third bond issue for $250,000 was approved by the City and County Councils in May 1985 and the Indiana State Board of Commissioners in June 1985 and sold in June 1985. The funds will be used to acquire real estate interests for Pigeon Creek Section, Unit 2, Parts 3 and 4.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $49,800,000 is a decrease of $1,600,000 from the latest estimate of ($51,400,000) presented to Congress (FY 1986). This change includes decreases of $440,700 for adjustments in the estimated inflation allowance through the construction period; $1,020,500 design changes for realignment of the levee and floodwall, Stringtown Road to U.S. Hwy 41, and $138,800 for post-contract award and other estimating adjustments made up of a decrease of ($154,600) for landscaping at Garvin Park for reduction in the areas to be planted due to clearance restrictions at the levee and floodwall and an economical contract price, partially offset by an increase of ($15,800) for final costs on completed work.

STATUS OF ENVIRONMENTAL IMPACT STATEMENTS AND COMPLIANCE WITH CLEAN WATER ACT: The final Environmental Impact Statement was filed with CEQ on 19 November 1973.

The provisions of Section 404 of the Clean Water Act have been met for construction of Pigeon Creek Section, Unit 2, Cedar Street to Stringtown Road (Part 2), Levee and Floodwall, including Landscaping-Garvin Park and North 1st Avenue, Diamond Avenue and Stringtown Road Pumping Plants by a Section 404(b)(1) Evaluation, a Public Notice issued on 5 May 1980, a certification issued by the State of Indiana on 9 June 1980 and the District Engineer's signature on the Evaluation Report 27 June 1980.

The provisions of Section 404 of the Clean Water Act are scheduled to be met for construction of Pigeon Creek Section, Unit 2, Stringtown Road to U.S. Highway 41 (Part 3), Levee and Floodwall (including U.S. Highway 41 West Pumping Plant) by a Section 404(b)(1) Evaluation, a Public Notice issued, a certification from the Indiana Department of Natural Resources, and the District Engineer's signature on the Evaluation Report all in 2nd Quarter FY 1986.

OTHER INFORMATION: Funds to initiate preconstruction planning and construction were appropriated in FY 1938. Appropriation of construction funds was stopped in FY 1945. Appropriation of preconstruction planning funds was resumed in FY 1957. Appropriation of construction funds was resumed in FY 1959, and stopped in FY 1967. Appropriation of construction funds was again resumed in FY 1970.

Howell Section, Unit 2, was reclassified "inactive" on 7 July 1977 on the basis of studies that indicate this separable part of the project is not economically justified.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: Ohio River
District: Louisville

Project: Evansville, Indiana (Continuing)

| | Estimates Presented to Congress ($1,000) | | | | |
|---|---|---|---|---|---|
| Item | Original Baseline | Cumulative Changes | Last | Incremental Change | Current |
| Federal Cost<br>(Price Level) | 2,143<br>(Jul 1937) | | 51,400 1/ | | 49,800 1/ 2/ |
| Reason for Change: | | (49,257) 1/ | | ( -1,600) 2/ | |
| a. Price Escalation | | 43,410 | | - 441 | |
| b. Design Changes | | 11,823 | | -1,020 | |
| c. Additional Function Added Under General Authorization | | -7,900 3/ | | | |
| d. Authorized Modification | | | | | |
| e. Post Contract Award and Other Estimating Adjustments | | 1125 | | -139 | |
| f. Schedule Changes | | 719 4/ | | | |
| g. Sundry | | 80 5/ | | | |
| h. Real Estate | | | | | |

1/ Includes an allowance for estimated inflation through the construction period.

2/ Includes $-441 for adjustments in the estimated inflation allowance through the construction period.

3/ Howell Section, Unit 2 reclassified "inactive" 7 July 1977, with estimated cost of $7,900 (Oct 77 Price Level).

4/ For price escalation on item that was ready for construction, but was delayed due to local sponsor's failure to provide rights-of-way ($457); additional engineering and design for several revisions to plan of protection that resulted from changing attitude of local sponsor as to type of work desired ($145); and for supervision and administration for stretch out in project completion ($117).

5/ For Uniform Relocation Assistance & Real Property Acquisition Policies Act of 1970 (PL 91-646), $60; and for Preservation of Historic and Archaeological Data Act of 1974 (PL 93-291), $20.

4 FEB 1986

REPORTS CONTROL SYMBOL: DAEN-CWB-13

| | |
|---|---|
| APPROPRIATION TITLE: CONSTRUCTION GENERAL | CLASSIFICATION: LOCAL PROTECTION PROJECTS |

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM (a) | PROJECT COST ESTIMATE (b) | TOTAL TO 30 SEP 19 85 (c) | CURRENT FY 1986 (d) | BUDGET FY 1987 (e) | BALANCE TO COMPLETE AFTER FY 1987 (f) |
|---|---|---|---|---|---|---|
| 1 | Lands and Damages - Complete | 72.6 | 72.6 | | | |
| 2 | Channels - Complete | 13.0 | 13.0 | | | |
| 3 | Levees and Floodwalls | 18,812.4 | 13,262.3 | 231.1 | 1,295.0 | 4,024.0 |
| 4 | Pumping Plants | 21,607.8 | 7,652.6 | 44.7 | 2,640.0 | 11,270.5 |
| 5 | Engineering and Design | 5,291.1 | 4,498.1 | 400.0 | 159.0 | 234.0 |
| 6 | Supervision and Administration | 4,003.1 | 2,413.1 | 62.0 | 401.0 | 1,127.0 |
| 7 | Total Applied Cost (Fed Funds Only) | 49,800.0 | 27,911.7 | 737.8 | 4,495.0 | 16,655.5 |
| 8 | Undistributed Cost Constr Facilities | | +28.3 | +8.2 | +5.0 | -41.5 |
| 9 | Total Project Cost (Fed Funds Only) | 49,800.0 | 27,940.0 | 746.0 | 4,500.0 | 16,614.0 |
| 10 | Pending Adjustments - None | | | | | |
| 11 | Total Cost (Fed Funds Only) | 49,800.0 | 27,940.0 | 746.0 | 4,500.0 | 16,614.0 |
| 12 | Undelivered Orders | | +406.0 | -406.0 | | |
| 13 | Total Obligations | | 28,346.0 | 340.0 | 4,500.0 | 16,614.0 |
| 14 | | | | | | |
| 15 | METHOD OF FINANCING: | | | | | |
| 16 | ALLOCATIONS | | 28,466.0 | 220.0 1/ | | |
| 17 | UNOBLIGATED CARRYOVER FROM PRIOR YEAR | | | 120.0 | | |
| 18 | TOTAL FUNDS AVAILABLE FOR OBLIGATION | | | 340.0 | | |
| 19 | APPROPRIATIONS REQUIRED | | | | 4,500.0 | 16,614.0 |
| 20 | | | | | | |
| 21 | | | | | | |
| 22 | 1/ Reflects $2,600,000 reduction assigned as savings and slippage and $20,000 transfer to the project. | | | | | |
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| EFFECTIVE DATE<br>1 JAN 86 | DIVISION OHIO RIVER<br>DISTRICT LOUISVILLE | REGION OHIO<br>BASIN OHIO MAIN STEM | PROJECT<br>EVANSVILLE, INDIANA |

ENG FORM 1 SEP 78 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986

APPROPRIATION TITLE: Construction, General - National River and Recreation Area

PROJECT: Big South Fork National River and Recreation Area, Kentucky and Tennessee (Continuing)

LOCATION: The project is located in Northeastern Tennessee and Southeastern Kentucky along the Big South Fork River and its tributaries in Pickett, Scott, Fentress, and Morgan Counties, Tennessee, and McCreary County, Kentucky.

AUTHORIZATION: Water Resources Development Act of 1974 (Section 108), as modified by Water Resources Development Act of 1976 (Section 184).

BENEFIT-COST RATIO: The remaining benefit-remaining cost ratio is not applicable because monetary benefits have not been quantified.

| SUMMARIZED FINANCIAL DATA | | | Accumulated % of Est. Fed. Cost |
|---|---|---|---|
| Estimated Federal Cost | | $103,522,000 | |
| Estimated Non-Federal Cost | | 0 | |
| Total Estimated Project Cost | | $103,522,000 | |
| Allocations to 30 September 1985 | | $ 81,059,300 | |
| Conference Allowance for FY 1986 | $10,000,000 | | |
| Allocation for FY 1986 | | 8,600,000 1/ | |
| Allocations to Date | | $ 89,659,300 | 87 |
| Allocation Requested for FY 1987 | | $ 9,000,000 | 95 |
| Scheduled Balance to Complete after FY 1987 | | $ 4,862,700 | |
| Unscheduled Balance to Complete after FY 1987 | | 0 | |

| STATUS: (1 January 1986) | PERCENT COMPLETE | COMPLETION DATE |
|---|---|---|
| Lands and Damages | 92 | Mar 1988 |
| Relocations | 100 | Apr 1985 |
| Roads and Bridges | 82 | Dec 1986 |
| Recreation | 43 | Jun 1988 |
| Cultural Resource Preservation | 64 | Sep 1986 |
| Buildings, Grounds, & Utilities | 0 | Jun 1988 |
| Permanent Operating Equipment | 72 | Sep 1986 |
| Entire Project | 81 | Jun 1988 |

1/ Reflects $1,400,000 reduction assigned as savings and slippage.

PHYSICAL DATA

Lands and Damages

Acres - 105,162

Type - Primarily Forest

Relocations

Utilities $99,000

Recreation

| | | |
|---|---|---|
| 4 | Recreation Sites | $15,528,000 |
| 23.4 | Miles of Access Roads Including 3 Bridges | $15,012,000 |
| 2.2 | Miles of Circulatory Roads | $ 950,000 |
| 250 | Miles of Trails, 2 Overlooks, and Miscellaneous Development | $ 3,869,000 |

REGION: Ohio

DIVISION: OHIO RIVER

DISTRICT: NASHVILLE

4 FEB 1986

Big South Fork, Kentucky & Tennessee

JUSTIFICATION: The Big South Fork National River and Recreation Area was established for the purpose of conserving and interpreting an area containing unique cultural, historic, geologic, fish and wildlife, archaeologic, scenic, and recreational values; and preserving as a natural free-flowing stream the Big South Fork of the Cumberland River, including major portions of its Clear Fork and New River stems and portions of their various tributaries for the benefit and enjoyment of present and future generations. The proposed project is located in the Appalachian Region. Counties located within reasonable commuting distance of the project which are designated as redevelopment areas by the Secretary of Commerce are: Campbell County, TN; Fentress County, TN; Scott County TN; McCreary County, KY; and Whitley County, KY.

FISCAL YEAR 1987: The requested amount will be applied to:

| | |
|---|---|
| Continue Land Acquisition | $ 2,279,000 |
| Complete Construction of Roads | 1,962,000 |
| Continue Recreation Facilities | 3,524,000 |
| Continue Buildings, Grounds, and Utilities | 220,000 |
| Engineering and Design | 525,000 |
| Supervision and Administration | 490,000 |
| Total | $ 9,000,000 |

The funds requested are required for construction during the budget year.

NON-FEDERAL: Not applicable.

STATUS OF LOCAL COOPERATION: None required for construction.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $103,522,000 is the same as the latest estimate presented to Congress (FY 1986). This reflects an increase of $883,000 for post-contract award and other estimating adjustments offset by a decrease of $883,000 for adjustments in the estimated inflation allowance through the construction period.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The Draft Environmental Impact Statement was filed with CEQ 3 October 1975. The Final Environmental Impact Statement was approved on 14 May 1977.

The provisions of Section 404 of the Clean Water Act have been met by Section 404(b)(1) Evaluation, a Public Notice issued on 6 August 1980, the State of Tennessee Waiver of Certification on 29 September 1980, and the Nashville District Engineer's signature on the Environmental Assessment Report on 10 November 1980.

OTHER INFORMATION: Funds to initiate preconstruction plannning were available in FY 1974, and for construction in FY 1979. The scope of the project has been reduced to stay within the authorized ceiling of $103,522,000. The reduced scope project provides a balance between land acquisition and facility development which attempts to respond to the project purposes specifically listed in the authorizing act but stays within the authorized ceiling.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: OHIO RIVER
District: NASHVILLE

Project: BIG SOUTH FORK NATIONAL RIVER AND RECREATION AREA, KY & TN

| | Estimates Presented to Congress ($1,000) | | | | |
|---|---|---|---|---|---|
| Item | Original Baseline | Cumulative Changes | Last | Incremental Change | Current |
| Federal Cost<br>(Price Level) | 113,000<br>(Oct 1977) | | 103,522 1/ | | 103,522 1/ 5/ |
| Reason for Change | | (-9,478)1/ | | (0) | |
| a. Price Escalation | | 37,163 | | -883 4/ | |
| b. Design Changes | | 50,440 2/ | | | |
| c. Additional Function Added Under General Authorization | | 2,185 3/ | | | |
| d. Authorized Modification | | | | | |
| e. Post-Contract Award and Other Estimating Adjustments | | -12,386 | | +883 5/ | |
| f. Schedule Changes | | | | | |
| g. Sundry | | -97,534 | | | |
| h. Real Estate | | 10,654 | | | |

1/ Includes an allowance for estimated inflation through the construction period.

2/ Increase based on the estimate in the Master Plan Feature Design Memorandum and a reevaluation of the roads that were in the General Design Memorandum to incorporate the latest information.

3/ Increase for Cultural Resources Preservation, Oneida and Western Railbed Study, and Water Quality Monitoring.

4/ Includes $-883 for adjustments in the estimated inflation allowance through the construction period.

5/ Increases for additional trail work, to finalize a construction contract, and to construct two ranger stations.

REPORTS CONTROL SYMBOL: DAEN-CWB-13

| | |
|---|---|
| APPROPRIATION TITLE: CONSTRUCTION GENERAL | CLASSIFICATION:<br>Flood Control |

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM (a) | PROJECT COST ESTIMATE (b) | TOTAL TO 30 SEP 19 85 (c) | CURRENT FY 19 86 (d) | BUDGET FY 19 87 (e) | BALANCE TO COMPLETE AFTER FY 19 87 (f) |
|---|---|---|---|---|---|---|
| 1 | LANDS AND DAMAGES | $ 50,150.0 | $45,913.7 | $ 1,614.6 | $ 2,279.0 | $ 342.7 |
| 2 | RELOCATIONS | 99.0 | 99.0 | | | |
| 3 | ROADS AND BRIDGES | 15,962.0 | 11,903.6 | 2,096.4 | 1,962.0 | |
| 4 | RECREATION FACILITIES | 19,397.0 | 7,969.4 | 4,392.9 | 3,524.0 | 3,510.7 |
| 5 | CULTURAL RESOURCES PRESERVATION | 225.0 | 128.0 | 97.0 | | |
| 6 | BUILDINGS, GROUNDS, AND UTILITIES | 720.0 | | | 220.0 | 500.0 |
| 7 | PERMANENT OPERATING EQUIPMENT | 100.0 | 71.6 | 28.4 | | |
| 8 | ENGINEERING AND DESIGN | 13,052.0 | 11,498.3 | 781.5 | 525.0 | 247.2 |
| 9 | SUPERVISION AND ADMINISTRATION | 3,817.0 | 2,558.9 | 506.0 | 490.0 | 262.1 |
| 10 | TOTAL APPLIED COST (C of E Funds Only) | 103,522.0 | 80,142.5 | 9,516.8 | 9,000.0 | 4,862.7 |
| 11 | Undistributed Cost (None) | | 98.2 | -98.2 | | |
| 12 | CONSTRUCTION FACILITIES | 0 | | | | |
| 13 | TOTAL PROJECT COST (C of E Funds Only) | 103,522.0 | 80,240.7 | 9,418.6 | 9,000.0 | 4,862.7 |
| 14 | Pending Adjustments (None) | 0 | | | | |
| 15 | TOTAL COST (C of E Funds Only) | 103,522.0 | 80,240.7 | 9,418.6 | 9,000.0 | 4,862.7 |
| 16 | Undelivered Orders | | 814.8 | -814.8 | | |
| 17 | TOTAL OBLIGATIONS | | 81,055.5 | 8,603.8 | 9,000.0 | 4,862.7 |
| 18 | | | | | | |
| 19 | | | | | | |
| 20 | METHOD OF FINANCING | | | | | |
| 21 | Allocations | | 81,059.3 | 8,600.0 | | |
| 22 | Unobligated Carryover from Prior Year | | | 3.8 | | |
| 23 | Total Funds Available for Obligation | | 81,059.3 | 8,603.8 | | |
| 24 | Appropriations Required | | | | 9,000.0 | 4,862.7 |
| 25 | | | | | | |
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|---|---|---|---|
| EFFECTIVE DATE<br>1 Jan 86 | DIVISION OHIO<br>DISTRICT NASHVILLE | REGION OHIO<br>BASIN CUMBERLAND | PROJECT BIG SOUTH FORK NATIONAL RIVER AND RECREATION AREA, KENTUCKY AND TENNESSEE |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986

**APPROPRIATION TITLE:** Construction, General - Local Protection Projects (Flood Control)

**PROJECT:** Southwestern Jefferson County, Kentucky (Continuing)

**LOCATION:** The project is located in Jefferson County, Kentucky, on the left bank of the Ohio River between river miles 616 and 630 downstream from Pittsburgh, Pennsylvania. This location is contiguous to and downstream from the existing local protection project for Louisville.

**AUTHORIZATION:** 1968 Flood Control Act

**BENEFIT-COST RATIO:** The remaining benefit-remaining cost ratio is 10.9 to 1 at 3-1/4 percent. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1973) was 1.8 to 1. The benefit-cost ratio was based on the project functioning independently.

| SUMMARIZED FINANCIAL DATA | | | Accum. % of Est. Fed. Cost |
|---|---|---|---|
| Estimated Federal Cost | | $57,500,000 | |
| Estimated Non-Federal Cost | | 9,917,000 | |
| Cash Contribution | $ 0 | | |
| Other | 9,917,000 | | |
| Total Estimated Project Cost | | $67,417,000 | |
| Allocations to 30 September 1985 | | $38,861,000 | |
| Conference Allowance for FY 1986 | $ 6,000,000 | | |
| Allocation for FY 1986 | | 3,660,000 1/ | |
| Allocations to Date | | $42,521,0000 | 74 |
| Allocation Requested for FY 1987 | | 7,500,000 | 87 |
| Scheduled Balance to Complete after FY 1987 | | 7,479,000 | |
| Unscheduled Balance to Complete after FY 1987 | | 0 | |

| STATUS (1 January 1986) | PERCENT COMPLETE | COMPLETION SCHEDULE |
|---|---|---|
| Relocations | 92 | Sep 1987 |
| Levees and Floodwalls | 74 | Dec 1988 |
| Pumping Plants | 42 | Dec 1988 |
| Cultural Resources Preservation | 100 | |
| Buildings, Grounds and and Utilities | 100 | |
| Permanent Operating Equip. | 100 | |
| Entire Project | 66 | Dec 1988 |

1/ Reflects $1,900,000 reduction assigned as savings and slippage and $440,000 transfer from the project.

## PHYSICAL DATA

The project is a system of earth levees, concrete floodwalls, pumping plants and related items for the protection of Southwestern Jefferson County, Kentucky, from Ohio River flood 3 feet higher than the record flood of 1937.

| | | | |
|---|---|---|---|
| Earth Levee | 68,500 feet | Pumping Plants - 4 | Closure Structures: 3 Vehicular<br>2 Railroad |
| Concrete Wall | 1,550 feet | | |

DIVISION: Ohio River DISTRICT: Louisville REGION: Ohio

4 FEB 1986

JUSTIFICATION: The project when completed will eliminate flood damages in 24,100 acres of land (1970 population 52,800) in southwestern Jefferson County. About 50 percent of the protected area has been developed as suburban to Louisville and includes 13,063 residential units, 42 public units, 2 industrial units, and 356 commercial units, together with all the usual municipal utilities except sewage collection and treatment. The major industries in the area are Flintkote Company, Kosmos Cement Plant and two Louisville Gas & Electric Company steam-electric generating plants. The principal concentration of commercial establishments is along U.S. Highway 31-W which traverses the length of the area. Tracks of the Seaboard System (formerly Louisville and Nashville), and Illinois Central Gulf Railroads also pass through the area. The undeveloped portion of the protected area includes about 5,100 acres of agricultural lands and about 7,500 acres of unimproved lands. The value of development in the protected area is about $1,576.0 million (1985 values). The maximum flood of record occurred in January 1937. A recurrence of this flood under current conditions of development would cause damages estimated at about $295.4 million (1985 values), all of which would be prevented by the project. Average annual benefits are estimated at $8,400,000.

| Benefits | Amount (1 October 1985) |
|---|---|
| Flood Control | $ 4,468,000 |
| Land Enhancement | 3,932,000 |
| Total | $ 8,400,000 |

FISCAL YEAR 1987: The requested amount will be applied as follows:

| | | | |
|---|---|---|---|
| Continue relocations | $ 102,000 | Engineering and Design | $ 15,000 |
| Continue construction of levees | 2,413,000 | Supervision and Administration | $ 300,000 |
| Continue construction of pumping plants | 4,670,000 | Total | 7,500,000 |

The funds requested are required for construction during the budget year.

NON-FEDERAL COST: Prior to construction of the flood control portion of the project, local interests are required to furnish assurances satisfactory to the Secretary of the Army that they will (a) provide without cost to the United States, except as otherwise provided herein, all lands, easements and rights-of-way necessary for construction of the project, including sufficient interest to control developments in ponding areas that would be subject to significant damages when flooded; (b) hold and save the United States free from damages due to the construction works; (c) maintain and operate all the work after completion in accordance with regulations prescribed by the Secretary of the Army; (d) provide without cost to the United States all relocations of buildings and utilities, highway bridges, sewers, related and special facilities and local betterments; (e) prohibit encroachment on improved channels and ponding areas and, if ponding areas and capacities are impaired, substitute storage capacity or equivalent pumping capacity will be provided without cost to the United States; (f) hold and save the United States free from all water-rights claims which may result from construction and operations of the project; and (g) effect necessary and reasonable measures to prevent or control pollution to the extent that the recreational opportunities may be realized.

The initial investment required of local interests in construction of the flood control features of the authorized project is estimated at $9,917,000 broken down as follows:

| | |
|---|---|
| Lands and Damages | $ 7,953,000 |
| Relocation of Roads and Utilities | 1,964,000 |
| Total | $ 9,917,000 |

Local interests are required to maintain and operate the flood control features at an estimated annual cost of $117,000, including major replacement costs.

STATUS OF LOCAL COOPERATION: Jefferson County Fiscal Court is the cooperating agency for this project.

Assurances of the intent of the Jefferson County Fiscal Court to participate in implementation of the authorized improvements are contained in Resolutions adopted by the agency on 25 November 1964 and 22 November 1966.

A bond issue, sponsored by the Jefferson County Community Improvement District, for separate financing of seven county improvement projects, including one for the Southwestern Jefferson County local protection project in combination with extensive drainage improvements in the area, failed to receive voter acceptance, except for a hospital project, in the 3 November 1970 general election. A later bond issue to provide funds ($17 million for the floodwall and drainage improvements) for meeting requirements of local cooperation was resubmitted to Jefferson County voters in the 7 November 1972 general election and was approved by a 62% majority.

Formal assurances of local cooperation for the flood protection portion of the Southwestern Jefferson County Project executed by resolution of the Jefferson County Fiscal Court adopted on 17 September 1971, were accepted by the District Engineer on 23 September 1971.

By letter, dated 27 December 1971, the Jefferson County Fiscal Court, Department of Public Works, furnished a deed and authorization-of-entry for a part of the rights-of-way required for the project. Authorization-of-entry for Levee Sections 1, 2, 3, 4A, 4, 5 and Pond Creek Pumping Plant were furnished on 31 August 1973, 13 February 1976, 27 March 1979, 19 August 1980 11 August 1982, and 23 July 1985, respectively.

Section 5 land acquisition requires an easement from the Seaboard System Railroad (formerly L&N Railroad) and a Louisville Gas & Electric Co. large pipeline tract subordination; also, construction of Section 5 may not start until pending easements in all sections have been acquired. As of 1 January 1986, the local sponsor has acquired all of the required easements for Section 5 and 257 of the 290 easements for ponding.

Permits for construction of Levee Sections 1, 2, 4A, 3, 6 and 5, and Pond Creek Pumping Plant were obtained from the Commonwealth of Kentucky on 28 July 1973, 22 June 1976, 27 March 1978, 18 August 1978, 27 May 1981, and 26 September 1985, respectively.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $57,300,000 is a decrease of $3,100,000 from the latest estimate of $60,400,000 presented to Congress (FY 1986). This change includes decreases of $837,000 for post- contract award and other estimating adjustments made-up of decreases of ($132,000) for negotiated contract of Louisville Gas & Electric Company gas pipeline relocation at levee section 5; ($289,300) for savings on completed relocation and construction contracts that result from non-use of contingency allowances; ($1,005,000) for contract award for construction of levee section 5 and Pond Creek pump plant based on receipt of favorable bids and current unit prices; and ($36,400) for supervision and administration based on reanalysis of requirements; offset, in part, by increases of ($274,200) for additional 3 years routine maintenance, mowing and miscellaneous repairs of completed pumping plants; and ($421,700) for engineering and design based on additional studies associated with Pond Creek pump plant; which decreases were further partially offset by a decrease of $2,273,000 for reduction in the anticipated inflation allowance through the construction period.

STATUS OF ENVIRONMENTAL IMPACT STATEMENTS AND COMPLIANCE WITH CLEAN WATER ACT: The Final Environmental Impact Statement was filed with the Council on Environmental Quality on 12 July 1973.

| | |
|---|---|
| Levee Section 3 - | The provisions of Section 404 of Clean Water Act have been met by a Section 404(b)(1) Evaluation, a Public Notice issued on 3 April 1978, a Certification issued by the State of Kentucky on 18 September 1978, and the District Engineer's signature on the Section 404 Evaluation Report, dated 3 October 1978. |
| Levee Section 6 - | The provisions of Section 404 of the Clean Water Act do not apply, because the project improvements do not involve the placement of fill material or the discharge of dredged material into the waters of the United States. |
| Levee Sections 4A, 5- and Pond Creek Pumping Plant | The provisions of Section 404 of the Clean Water Act have been met by Public Notice issued on 18 April 1979 and a Certification issued by the State of Kentucky on 9 May 1979; a Section 404 (b)(1) Evaluation Report has been completed and signed by District Engineer on 12 October 1979. |

OTHER INFORMATION Funds to initiate preconstruction planning were appropriated in FY 1970 and for construction in FY 1973.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

**Division:** Ohio River
**District:** Louisville

**Project:** Southwestern Jefferson County, Kentucky

| Item | Estimates Presented to Congress ($1,000) | | | | |
|---|---|---|---|---|---|
| | Original Baseline | Cumulative Changes | Last | Incremental Change | Current |
| Federal Cost<br>(Price Level) | 26,800<br>(Jul 1971) | | 60,600 1/ | | 57,500 1/ 2/ |
| Reason for Change: | | (33,800) 1/ | | (-3,100) 1/ 2/ | |
| a. Price Escalation | | 36,029 | | -2,273 | |
| b. Design Changes | | 10,194 | | | |
| c. Additional Function Added Under General Authorization | | -5,967 3/ | | | |
| d. Authorized Modification | | | | | |
| e. Post Contract Award and Other Estimating Adjustments | | -6,738 | | -827 | |
| f. Schedule Changes | | | | | |
| g. Sundry | | 262 4/ | | | |
| h. Real Estate | | | | | |

1/ Includes an allowance for estimated inflation through the construction period.
2/ Includes $-2,273 for adjustments in the estimated inflation allowance through the construction period.
3/ For elimination of recreation facilities and associated construction cost to provide a single purpose flood control project, $-6,385; and for Preservation of Historic & Archaeological Data Act of 1974 (PL 93-291), $418.
4/ For GSA Rental charge, $262.

4 FEB 1986

REPORTS CONTROL SYMBOL: DAEN-CWB-13

| | |
|---|---|
| APPROPRIATION TITLE: CONSTRUCTION GENERAL | CLASSIFICATION: LOCAL PROTECTION PROJECTS |

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM (a) | PROJECT COST ESTIMATE (b) | TOTAL TO 30 SEP 19 85 (c) | CURRENT FY 19 86 (d) | BUDGET FY 19 87 (e) | BALANCE TO COMPLETE AFTER FY 19 87 (f) |
|---|---|---|---|---|---|---|
| 1 | Relocations | 1,360.1 | 1,253.1 | 5.0 | 102.0 | |
| 2 | Levees and Floodwalls | 24,472.6 | 17,011.4 | 1,342.4 | 2,413.0 | 3,705.8 |
| 3 | Pumping Plants | 21,344.5 | 8,778.3 | 4,090.0 | 4,810.0 | 3,666.2 |
| 4 | Cultural Resources Preservation | 283.7 | 283.7 | | | |
| 5 | Buildings, Grounds and Utilities | 5.2 | 5.2 | | | |
| 6 | Permanent Operating Equipment | 0.9 | 0.9 | | | |
| 7 | Engineering and Design | 6,329.8 | 6,233.4 | 75.0 | 15.0 | 6.4 |
| 8 | Supervision and Administration | 3,703.2 | 2,960.0 | 290.0 | 300.0 | 153.2 |
| 9 | Total Applied Cost (Federal Funds) | 57,500.0 | 36,526.0 | 5,802.4 | 7,640.0 | 7,531.6 |
| 10 | Undistributed Cost Constr Facilities | | +35.4 | +7.2 | +10.0 | -52.6 |
| 11 | Total Project Cost (Federal Funds) | 57,500.0 | 36,561.4 | 5,809.6 | 7,650.0 | 7,479.0 |
| 12 | Pending Adjustments | | | | | |
| 13 | Total Cost (Federal Funds) | 57,500.0 | 36,561.4 | 5,809.6 | 7,650.0 | 7,479.0 |
| 14 | Undelivered Orders | | +2,086.3 | -1,936.3 | -150.0 | |
| 15 | Total Obligations (Federal Funds) | | 38,647.7 | 3,873.3 | 7,500.0 | 7,479.0 |
| 16 | | | | | | |
| 17 | | | | | | |
| 18 | METHOD OF FINANCING: | | | | | |
| 19 | ALLOCATIONS | | 38,861.0 | 3,660.0 1/ | | |
| 20 | UNOBLIGATED CARRYOVER FROM PRIOR YEAR | | | 213.3 | | |
| 21 | TOTAL FUNDS AVAILABLE FOR OBLIGATION | | | 3,873.3 | | |
| 22 | APPROPRIATIONS REQUIRED | | | | 7,500.0 | 7,479.0 |
| 23 | | | | | | |
| 24 | | | | | | |
| 25 | | | | | | |
| 26 | | | | | | |
| 27 | 1/ Reflects $1,900,000 reduction assigned as savings and slippage and $440,000 transfer from the project. | | | | | |
| 28 | | | | | | |
| 29 | | | | | | |
| 30 | | | | | | |
| 31 | | | | | | |
| 32 | | | | | | |
| 33 | | | | | | |

| | | | |
|---|---|---|---|
| EFFECTIVE DATE 1 JAN 86 | DIVISION OHIO RIVER<br>DISTRICT LOUISVILLE | REGION OHIO<br>BASIN OHIO-MAIN STEM | PROJECT SOUTHWESTERN JEFFERSON COUNTY, KENTUCKY |

ENG FORM 1 SEP 70 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986

REPORTS CONTROL SYMBOL: DAEN-CWB-13

| | |
|---|---|
| APPROPRIATION TITLE: CONSTRUCTION GENERAL | CLASSIFICATION: LOCAL PROTECTION PROJECTS |

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM (a) | PROJECT COST ESTIMATE (b) | TOTAL TO 30 SEP 19 85 (c) | CURRENT FY 19 86 (d) | BUDGET FY 19 87 (e) | BALANCE TO COMPLETE AFTER FY 19 87 (f) |
|---|---|---|---|---|---|---|
| 1 | NON-FEDERAL COSTS | | | | | |
| 2 | | | | | | |
| 3 | Cash Contributions | None | | | | |
| 4 | Other Costs | 9,917.0 | 9,717.0 | 25.0 | 175.0 | |
| 5 | Lands & Damages | (7,953.0) | (7,953.0) | (-) | (-) | |
| 6 | Relocations | (1,688.0) | (1,538.0) | (-) | (-) | |
| 7 | Other E&D & S&A) | (276.0) | (226.0) | (25.0) | (175.0) | |
| 8 | | | | | | |
| 9 | TOTAL NON-FEDERAL COSTS | 9,917.0 | 9,717.0 | 25.0 | 175.0 | |
| 10 | | | | | | |
| 11 | | | | | | |
| 12 | METHOD OF FINANCING (NON-FEDERAL) | | | | | |
| 13 | ALLOCATIONS | | 9,717.0 | | | |
| 14 | UNOBLIGATED CARRYOVER FROM PRIOR YEAR | | | | | |
| 15 | TOTAL FUNDS AVAILABLE FOR OBLIGATIONS | | | | | |
| 16 | APPROPRIATION REQUIRED | | | 25.0 | 175.0 | |
| 17 | | | | | | |
| 18 | | | | | | |
| 19 | TOTAL PROJECT COSTS | | | | | |
| 20 | Federal (Corps) & Non-Federal Costs | 67,417.0 | 46,278.4 | 5,834.6 | 7,825.0 | 7,479.0 |
| 21 | | | | | | |
| 22 | | | | | | |
| 23 | | | | | | |
| 24 | | | | | | |
| 25 | | | | | | |
| 26 | | | | | | |
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| 30 | | | | | | |
| 31 | | | | | | |
| 32 | | | | | | |
| 33 | | | | | | |

| | | | |
|---|---|---|---|
| EFFECTIVE DATE<br>1 JAN 86 | DIVISION OHIO RIVER<br>DISTRICT LOUISVILLE | REGION OHIO<br>BASIN OHIO-MAIN STEM | PROJECT SOUTHWESTERN JEFFERSON COUNTY, KENTUCKY |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986

**APPROPRIATION TITLE:** Construction, General - Local Protection Projects (Flood Control)

**PROJECT: Mill Creek, Ohio (Continuing)**

**LOCATION:** The proposed project is located along 28-mile length of Mill Creek in Hamilton and Butler Counties, Ohio, and the 3/4-mile length of East Fork in Hamilton County, Ohio. Lower Mill Creek is in the commercial and industrial heart of the Cincinnati metropolitan area in the southwestern portion of the State. The proposed project will provide protection for the developed portions of the Mill Creek flood plain for a flood having a frequency of one or more occurrences every 50 years from the barrier dam (stream mile 0.3) upstream to Mitchell Avenue (stream mile 6.0) except for 100-year level protection on the right bank between stream miles 3.7 and 4.0 and for a flood having a frequency of one or more occurrences every 100 years from Mitchell Avenue (stream mile 6.0) to I-275 (stream mile 18.2). The 18-mile portion of the project in Hamilton County involves structural measures for channel improvement while the 10-mile portion of the project in Butler County involves regulation of development in the flood plain.

**AUTHORIZATION:** 1970 Flood Control Act

**BENEFIT-COST RATIO:** The remaining benefit-remaining cost ratio is 4.6 to 1 at 5-5/8 percent. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1975) was 3.2 to 1. The benefit-cost ratio was based on the project functioning independently.

| SUMMARIZED FINANCIAL DATA | | | Accum. % of Est. Fed. Cost |
|---|---|---|---|
| Estimated Total Appropriation Requirement | $156,000,000 | | |
| Future Non-Fed. Reimb. | 4,119,000 | | |
| Estimated Federal Cost (Ultimate) | | $151,881,000 | |
| Estimated Non-Federal Cost: | | 40,377,000 | |
| Reimbursement: Recreation | 394,000 | | |
| Other: Recreation Lands | 3,725,000 | | |
| Flood Control, Lands | 36,258,000 | | |
| Total Estimated Project Cost | | $192,187,000 | |
| Allocations to 30 Sep 1985 | | 30,758,000 | |
| Conference Allowance for FY 1986 | $ 11,000,000 | | |
| Allocation for FY 1986 | | 10,600,000 1/ | |
| Allocations to Date | | $ 41,358,000 | 27 |
| Allocation Requested for FY 1987 | | 15,000,000 | 36 |
| Scheduled Balance to Complete after FY 1987 | | $ 99,642,000 | |
| Unscheduled Balance to Complete after FY 1987 | | 0 | |

| STATUS (1January 1986) | PERCENT COMPLETE | COMPLETION SCHEDULE |
|---|---|---|
| Relocations | 6 | Sep 1995 |
| Channels & Canals | 27 | Jan 1997 |
| Levees | 14 | Jan 1995 |
| Pumping Plants | 0 | Apr 1996 |
| Recreation Facilities | 0 | Dec 1998 |
| Building, Grounds & Utilities | 100 | |
| Permanent Operating Equipment | 0 | Dec 1978 |
| Entire Project | 24 | Dec 1998 |

1/ Reflects $400,000 transfer from the project in October 1985.

DIVISION: Ohio River

DISTRICT: Louisville

4 FEB 1986

REGION: Ohio
Mill Creek, Oh

## PHYSICAL DATA

**Channel Improvements:**
Length - 18 miles

**Pumping Plants**
Number - 3

**Relocations:**
Railroad bridges - $ 3,954,200

**Levee:**
Length - 2 miles

**Land Fills:**
Length - 8 miles

JUSTIFICATION: The proposed project would protect the Mill Creek Basin from residual flood damages resulting from headwater flooding. On the average, damaging headwater floods occur about twice yearly. As the result of the small size of the Mill Creek drainage area, the basin is potentially subject to severe flooding from any type storm with limited time available for evacuation. The area contains about 3,000 acres of intensively developed land and a broad mix of industrial, commercial, and residential development; and a complex network of transportation facilities including roads, streets, interstate highways, extensive railroad yards, truck and spur lines, and utilities. Large volumes of toxic substances are stored and utilized in the flood plain by manufacturers. Flammable and volatile liquids are also present in the flood plain in large quantities. Flooding creates extreme hazards in the areas of public health, fire and explosion. The value of property in the flood plain of Hamilton County is about $2.4 billion (1985 values). About 5,000 persons reside and 20,000 persons are employed in the flood plain. However, the entire population of the metropolitan area of Cincinnati is adversely affected by Mill Creek flooding. The maximum flood of record occurred in March 1913 and the January 1959 flood was the second largest flood of record. A recurrence of the January 1959 flood, under current conditions of development, would cause damages estimated at $22,170,000 (1985 values). A recent damaging flood occurred in March 1982. In addition, the proposed project would provide specific-use recreation activities along the length of the Mill Creek main stem in Hamilton County. Average annual benefits are estimated at $39,648,000.

| Benefits | Amount (1 October 1985) |
|---|---|
| Flood Control | $ 39,078,000 |
| Recreation | 570,000 |
| Total | $ 39,648,000 |

FISCAL YEAR 1987: The requested amount will be applied as follows:

| | | | |
|---|---|---|---|
| Continue relocation of railroads | $ 495,000 | Engineering and Design | $ 1,800,000 |
| Continue construction of channels and canals | 9,305,000 | Supervision and Administration | 1,400,000 |
| Continue construction of pumping plants | 2,000,000 | Total | $15,000,000 |

The funds requested are required for construction during the budget year.

NON-FEDERAL COSTS: Prior to construction, local interests are required to (a) provide without cost to the United States all lands, easements, and rights-of-way necessary for construction of the project; (b) hold and save the United States free from damages due to the construction works; (c) maintain and operate all works after completion in accordance with regulations prescribed by the Secretary of the Army; (d) provide without cost to the United States all modifications and relocations of buildings, utilities, street and foot bridges, sewers, and related and special facilities as necessary for the construction of the project; (e) prevent encroachment on improved channels and on ponding areas that would decrease the effectiveness of the flood control improvements; (f) at least annually inform interests affected as to the degree of protection afforded by the project; and (g) provide guidance and leadership in preventing unwise and uneconomical future development of the flood plain areas by encouraging prudent use of flood proofing, land regulation planning, or other flood plain management techniques to reduce flood losses.

In addition, with respect to the recreational aspects of the project, local interests are required to furnish assurances that they will, if necessary, pay or contribute in kind, a portion of the cost of recreational facilities which, when added to the cost of recreation lands, would amount to at least 50 percent of the total first cost of the recreation lands and recreation facilities and assure access to the recreation facilities to all on equal terms. Current estimates of the total cost of the recreation lands and recreational facilities is $8,238,000, of which $3,725,000 is local interests' responsibility for lands and $4,513,000 is for recreational facilities, including engineering and design and supervision and administration. Therefore, local interests' responsibility for recreational development totals $4,119,000 ($3,725,000 for recreational lands plus $394,000 for recreational facilities).

The initial investment required of local interests in construction of the flood control and recreation features of the project is established at $40,377,000 (1985 values) broken down as follows:

| | Flood Control | Recreation |
|---|---|---|
| Lands and Damages | $ 15,364,000 | $ 3,725,000 |
| Relocation and Modification of Utilities & Bridges | 20,894,000 | - |
| Recreation Facilities (Initial) | - | 394,000 |
| Total | $ 36,258,000 | $ 4,119,000 |

The estimated annual cost to local interests of maintenance, operation and replacements for the flood control aspects of the project is $120,000 and lands and facilities for the recreation aspects is $119,000.

STATUS OF LOCAL COOPERATION: The Millcreek Valley Conservancy District is the responsible cooperating agency for all required assurances.

An assurance agreement covering local cooperation requirements for the project consistent with Section 221 of the 1970 Flood Control Act and the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 was executed by the Conservancy District on [illegible] February [illegible] and for the Secretary of the Army on [illegible] March [illegible]. A recreation cost-sharing contract was executed by the Conservancy District [illegible] February [illegible] and approved for the Secretary of the Army [illegible] May [illegible].

The Conservancy District presented the approved project plan to the State Conservancy Court on [illegible] January [illegible] for concurrence on the plan changes and to present evidence of sufficient funding after which a District preliminary tax assessment would be levied.

Also, Millcreek Valley Conservancy District letter, dated [illegible] October [illegible], outlined its real estate acquisition schedule of planned events that provided for completion of acquisition for the entire project on or before 30 September [illegible]. Subsequent developments precluded the achievement of that schedule and as of 1 January [illegible] there was no Conservancy District schedule for completion of right-of-way acquisition for the entire project.

Ohio Department of Natural Resources permits relating to construction of the various sections of the entire Mill Creek project have been either procured or waived.

The authorizations-of-entry for Sections [illegible], [illegible] and [illegible] were executed by the local sponsor [illegible] September [illegible], [illegible] December [illegible] and [illegible] June [illegible], respectively.

Channel Section [illegible] has been completed and was transferred to the Millcreek Valley Conservancy District effective 1 October [illegible].

As of 1 January [illegible], the local sponsor has acquired [illegible] of the required [illegible] easements for Section [illegible] and [illegible] of the required [illegible] easements for Section [illegible]. It is expected that the remaining easements for Section [illegible] will be acquired by January [illegible] and for Section [illegible] by August [illegible].

COMPARISON OF FEDERAL COST ESTIMATES. The current Federal cost estimate of $[illegible] is a decrease of $[illegible] from the latest estimate of $[illegible] submitted to Congress (FY [illegible]). This change includes increases of $[illegible] for adjustment to the anticipated inflation allowance through the construction period; $[illegible] for design changes that consist of decreases of ($[illegible]) for proposed alternate railroad siding alignment for channel Section [illegible] that eliminates the need for a temporary trestle to maintain rail service for [illegible] Railroad Bridge [illegible], ($[illegible]) for deletion of Conrail Railroad Bridge [illegible] for channel Section [illegible] based on proposed change in channel alignment; and ($[illegible]) for reversion to original channel alignment in vicinity of [illegible] Distillers Products Company which eliminates need for a new bridge; offset, in part, by an increase of $[illegible] for post-contract award and other estimating adjustments that consist of increases of ($[illegible]) for estimated final cost on construction contract for channel Section 2 based on contract modification to repair damage to wash areas of cribwall and ($120,000) for levees and floodwalls - value engineering and as-built drawings based on costs to date and estimate of balance to complete; which increases were offset, in part, by a decrease of ($3,700) for final costs for completed construction contract for channel and levee Section 3.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The final Environmental Impact Statement (survey scope) was filed with CEQ on 7 October 1970, and included in the Authorization Report, House Document No. 91-413. The final Statement (post authorization scope) was filed with CEQ on 17 December 1974.

The provisions of Section 404 of the Clean Water Act have been met for construction of Section 7A channel improvement by a Section 404(b)(1) Evaluation, a Public Notice issued on 22 July 1980, a Certification from the State of Ohio was received on 7 August 1980, and the District Engineer's signature on the Evaluation Report on 26 November 1980.

The provisions of Section 404 of the Clean Water Act have been met for construction of the rest of the channel improvement project by: a Public Notice issued on 23 April 1981; a certification from the State of Ohio on 17 June 1981; a Section 404(b)(1) Evaluation Report on 26 June 1981; and the District Engineer's signature on the Evaluation Report on 26 June 1981.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1972 and for construction in FY 1975.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: Ohio River
District: Louisville

Project: Mill Creek, Ohio

| | Estimates Presented to Congress ($1,000) | | | | |
|---|---|---|---|---|---|
| Item | Original Baseline | Cumulative Changes | Last | Incremental Change | Current |
| Federal Cost<br>(Price Level) | 57,649<br>(Jul 1973) | | 162,000 1/ | | 156,000 1/2/ |
| Reason for Change: | | (104,351) 1/ | | (- 6,000) 1/ 2/ | |
| a. Price Escalation | | 106,422 | | - 4,172 | |
| b. Design Changes | | 27,567 | | - 4,344 | |
| c. Additional Function Added Under General Authorization | | | | | |
| d. Authorized Modification | | | | | |
| e. Post Contract Award and Other Estimating Adjustments | | - 35,851 | | 2,516 | |
| f. Schedule Change | | 5,460 | | | |
| g. Sundry | | 753 3/ | | | |
| h. Real Estate | | | | | |

1/ Includes an allowance for estimated inflation through the construction period.
2/ Includes $-4,172 for adjustments in the estimated inflation allowance through the construction period.
3/ For GSA rental charge, $673; and for Preservation of Historic & Archaeological Data Act of 1974 (PL 93-291), $80.

4 FEB 1986

REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: LOCAL PROTECTION PROJECTS

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM<br>(a) | PROJECT COST ESTIMATE<br>(b) | TOTAL TO 30 SEP 19 85<br>(c) | CURRENT FY 19 86<br>(d) | BUDGET FY 19 87<br>(e) | BALANCE TO COMPLETE AFTER FY 19 87<br>(f) |
|---|---|---|---|---|---|---|
| 1 | Relocations | 4,004.2 | 250.9 | 371.1 | 495.0 | 2,887.2 |
| 2 | Channels & Canals | 98,578.6 | 19,790.9 | 7,542.7 | 9,300.0 | 61,945.0 |
| 3 | Levees and Floodwalls | 6,733.7 | 932.3 | 4.4 | | 5,797.0 |
| 4 | Pumping Plants | 12,198.0 | | 1,000.0 | 2,000.0 | 9,198.0 |
| 5 | Recreation Facilities (Fed and Non-Fed) | 4,706.0 | | | | 4,706.0 |
| 6 | Buildings, Grounds and Utilities | 1.2 | 1.2 | | | |
| 7 | Permanent Operating Equipment | 23.8 | | | | 23.8 |
| 8 | Engineering and Design | 17,369.0 | 6,732.2 1/ | 2,000.0 | 1,800.0 | 6,836.8 |
| 9 | Supervision and Administration | 12,385.5 | 1,414.9 | 1,265.0 | 1,400.0 | 8,305.6 |
| 10 | Total Applied Cost (Fed Funds Only) | 156,000.0 | 29,122.4 | 12,183.2 | 14,995.0 | 99,699.4 |
| 11 | Undistributed Cost Constr Facilities | | +47.5 | +4.9 | +5.0 | -57.4 |
| 12 | Total Project Cost (Fed Funds Only) | 156,000.0 | 29,169.9 | 12,188.1 | 15,000.0 | 99,642.0 |
| 13 | Pending Adjustments | | | | | |
| 14 | Total Cost (Fed and Non-Fed Funds) | 156,000.0 | 29,169.9 | 12,188.1 | 15,000.0 | 99,642.0 |
| 15 | Undelivered Orders | | +1,080.5 | -1,080.5 | | |
| 16 | Total Obligations (Fed and Non-Fed Funds) | | 30,250.4 | 11,107.6 | 15,000.0 | 99,642.0 |
| 17 | | | | | | |
| 18 | METHOD OF FINANCING: | | | | | |
| 19 | ALLOCATIONS | | 30,758.0 | 10,600.0 2/ | | |
| 20 | UNOBLIGATED CARRYOVER FROM PRIOR YEAR | | | 507.6 | | |
| 21 | TOTAL FUNDS AVAILABLE FOR OBLIGATION | | | 11,107.6 | | |
| 22 | APPROPRIATIONS REQUIRED | | | | 15,000.0 | 99,642.0 |
| 23 | | | | | | |
| 24 | | | | | | |
| 25 | 1/ Includes $116,015 for Real Estate Activities to assure compliance by local sponsor in the provision | | | | | |
| 26 | of local cooperation. | | | | | |
| 27 | | | | | | |
| 28 | 2/ Reflects $400,000 transfer from the project in October 1985. | | | | | |
| 29 | | | | | | |
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|---|---|---|---|
| EFFECTIVE DATE<br>1 JAN 86 | DIVISION OHIO RIVER<br>DISTRICT LOUISVILLE | REGION OHIO<br>BASIN MILL CREEK | PROJECT<br>MILL CREEK, OHIO |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986

REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: LOCAL PROTECTION PROJECTS

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM (a) | PROJECT COST ESTIMATE (b) | TOTAL TO 30 SEP 19 85 (c) | CURRENT FY 1986 (d) | BUDGET FY 1987 (e) | BALANCE TO COMPLETE AFTER FY 19 87 (f) |
|---|---|---|---|---|---|---|
| 1 | NON-FEDERAL COSTS | | | | | |
| 2 | | | | | | |
| 3 | Cash Contributions | 394.0 | | | | 394.0 |
| 4 | Other Costs | 39,983.0 | 1,840.0 | 4,325.0 | 7,030.0 | 26,788.0 |
| 5 | Flood Control | (36,258.0) | (1,840.0) | (4,325.0) | (7,030.0) | (23,063.0) |
| 6 | Lands & Damages | 15,364.0 | 1,200.0 | 2,500.0 | 4,000.0 | 7,664.0 |
| 7 | Relocations | 18,178.0 | 500.0 | 1,500.0 | 2,500.0 | 13,678.0 |
| 8 | Other (E&D & S&A) | 2,716.0 | 140.0 | 325.0 | 530.0 | 1,721.0 |
| 9 | Recreation Facilities | (3,725.0) | (-) | (-) | (-) | (3,725.0) |
| 10 | Lands & Damages | 3,671.0 | - | - | - | 3,671.0 |
| 11 | Other (E&D & S&A) | 54.0 | - | - | - | 54.0 |
| 12 | TOTAL NON-FEDERAL COSTS | 40,377.0 | 1,840.0 | 4,325.0 | 7,030.0 | 27,182.0 |
| 13 | | | | | | |
| 14 | | | | | | |
| 15 | METHOD OF FINANCING (NON-FEDERAL) | | | | | |
| 16 | ALLOCATIONS | | 1,840.0 | | | |
| 17 | UNOBLIGATED CARRYOVER FROM PRIOR YEAR | | | | | |
| 18 | TOTAL FUNDS AVAILABLE FOR OBLIGATIONS | | | | | |
| 19 | APPROPRIATION REQUIRED | | | 4,325.0 | 7,030.0 | 27,182.0 |
| 20 | | | | | | |
| 21 | TOTAL PROJECT COSTS | | | | | |
| 22 | Federal (Corps) & Non-Federal Costs | 196,377.0 | 31,009.9 | 16,513.1 | 22,030.0 | 126,824.0 |
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|---|---|---|---|
| EFFECTIVE DATE<br>1 JAN 86 | DIVISION OHIO RIVER<br>DISTRICT LOUISVILLE | REGION OHIO<br>BASIN MILL CREEK | PROJECT<br>MILL CREEK, OHIO |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986

**APPROPRIATION TITLE:** Construction, General - Local Protection Project (Flood Control)

**PROJECT:** Newark, Ohio

**LOCATION:** Newark is the county seat of Licking County, Ohio, and is located on the Licking River at the junction of North Fork and South Fork, 29 miles above the confluence of the Licking River with the Muskingum River at Zanesville, Ohio.

**AUTHORIZATION:** Flood Control Act of 1968.

**BENEFIT TO COST RATIO:** The remaining benefit-remaining cost ratio is 5.3 to 1 at 7-3/8%. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1977) was 2.1 to 1. The benefit-cost ratio was based on the project functioning independently.

| SUMMARIZED FINANCIAL DATA | | | Accum. % of Est. Fed. Cost |
|---|---|---|---|
| Estimated Federal Cost | | $ 9,600,000 | |
| Estimated Non-Federal Costs | | 4,215,000 | |
| Cash Contribution | | | |
| Other | 4,215,000 | | |
| Total Estimated Project Cost | | $13,815,000 | |
| | | | |
| Allocations to 30 September 1985 | | $5,260,000 | |
| Conference Allowance for FY 1986 | 1,100,000 | | |
| Allocation for FY 1986 | | 900,000 1/ | |
| Allocations to Date | | $6,160,000 | 64 |
| Allocation Requested for FY 1987 | | 2,500,000 | 90 |
| Scheduled Balance to Complete after FY 1987 | | 940,000 | |
| Unscheduled Balance to Complete after FY 1987 | | 0 | |

| STATUS: (1 January 1986) | PERCENT COMPLETE | COMPLETION SCHEDULE |
|---|---|---|
| Log Pond Run | 100 | |
| North Fork Channel | 25 | Dec 1987 |
| Entire Project | 50 | Dec 1987 |

1/ Reflects $200,000 reduction for Savings & Slippage.

DIVISION: OHIO RIVER

DISTRICT: HUNTINGTON

4 FEB 1986

REGION: OHIO
Newark, Ohio

## PHYSICAL DATA

The authorized project consisted of three separate units, each independent of the other. The Log Pond Run Segment is complete and consists of 6,300 feet of diversion channel with a bottom width of 20 feet and modification of 3,250 feet of existing channel along Sharon Valley Run. The Interior Drainage segment has been reclassified as deferred due to economic infeasibility. The third unit is the North Fork Channel modification which had to be reformulated when the Utica Lake project was reclassified as Inactive. The current North Fork Channel increment consists of enlarging 8,800 feet of channel to a bottom width of 90 feet following the existing stream with some minor straightening and realignment. The proposed channel extending from the mouth of North Fork to just upstream of the Manning Street Bridge would protect the City of Newark up to the 80 year frequency.

JUSTIFICATION: A serious flood problem exists in the upper Licking River Basin with the City of Newark being the major damage center. This heavily populated (41,200 - 1980 census) industrial area is subject to flooding from North Fork, South Fork, Raccoon Creek, and Log Pond Run, all of which flow through Newark or its suburban areas. The existing local protection project at Newark protects an area containing approximately 140 acres, 120 acres of which is highly developed. The unprotected area subject to flooding in and around Newark contains 909 acres of which 528 acres are developed lands. This total developed area (648 acres) contains 916 residences, 11 apartment buildings, 74 commercial establishments, 15 large and small industries, 3 churches, and 2 schools. During the January 1959 flood of record, when the existing levee was skirted, from 80 to 90 percent of the buildings flooded causing damages in excess of $7,700,000. The recommended Newark project would reduce average annual damages at the principal damage center along the right bank of North Fork. The completed segment reduces average annual damages by 84% in the rapidly developing Log Pond Run area of Newark. The average annual benefits for the North Fork Channel segment, all flood control, are currently estimated at $1,399,100 based on 1 October 1985 prices and 8-5/8% interest rate.

FISCAL YEAR 1987: The requested amount will be applied as follows:

| | | |
|---|---|---|
| Continue North Fork Channel Modification | | $2,350,000 |
| Supervision and Administration | | 150,000 |
| | TOTAL | $2,500,000 |

The funds requested are required for construction during the budget year.

NON-FEDERAL COSTS: To comply with requirements for construction of the North Fork Channel segment, local interests must furnish all lands, easements, rights-of-way, and relocations necessary for construction (total estimated cost of $4,215,000), and also must agree to operate and maintain the project at an estimated annual cost of $33,000.

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

**Division:** Ohio River
**District:** Huntington

**Project:** Newark, Ohio, LPP

| | Estimate Presented to Congress ($1,000) | | | | |
|---|---|---|---|---|---|
| **Item** | **Original Baseline** | **Cumulative Changes** | **Last** | **Incremental Change** | **Current** |
| Federal Cost | 2,770 | | 9,900 4/ | | 9,600 3/ 4/ |
| (Price Level) | (Oct 1975) | | | | |
| Reasons for Change: | | (7,130) 4/ | | (-300) 3/ | |
| a. Price Escalations | | 3,910 | | -150 | |
| b. Design Changes | | 390 | | | |
| c. Additional Function Added Under General Authorization | | | | | |
| d. Authorized Modification | | | | | |
| e. Post-Contract Award and Other Estimating Adjustments | | 2,830 1/ | | -150 2/ | |
| f. Schedule Changes | | | | | |
| g. Sundry | | | | | |
| h. Real Estate | | | | | |

1/ Includes increases of $2,513 for Channels and Canals based on construction of Log Pond Run and reformulation of North Fork Channel; $1,350 in E&D and $222 in S&A partially offset by a decrease of $1,255 in Pumping Plant for reclassification of Interior Drainage to deferred.

2/ Decreases of $128 in E&D $22 in S&A for reclassification of Interior Drainage to deferred.

3/ Includes $-150 for adjustments in the estimated inflation allowance through the construction period.

4/ Includes an allowance for estimated inflation through the construction period.

4 FEB 1986

REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: LOCAL PROTECTION (FLOOD CONTROL)

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM (a) | PROJECT COST ESTIMATE (b) | TOTAL TO 30 SEP 19 85 (c) | CURRENT FY 19 86 (d) | BUDGET FY 19 87 (e) | BALANCE TO COMPLETE AFTER FY 19 87 (f) |
|---|---|---|---|---|---|---|
| 1 | LOG POND RUN DIVERSION | | | | | |
| 2 | CHANNELS AND CANALS | 3,123,000 | 3,123,000 | | | |
| 3 | ENGINEERING AND DESIGN | 380,000 | 380,000 | | | |
| 4 | SUPERVISION AND ADMINISTRATION | 160,000 | 160,000 | | | |
| 5 | | | | | | |
| 6 | NORTH FORK CHANNEL IMPROVEMENTS | | | | | |
| 7 | CHANNELS AND CANALS | 4,000,000 | | 650,000 | 2,470,000 | 880,000 |
| 8 | ENGINEERING AND DESIGN | 1,470,000 | 1,436,100 | 33,900 | | |
| 9 | SUPERVISION AND ADMINISTRATION | 467,000 | 158,600 | 98,400 | 150,000 | 60,000 |
| 10 | | | | | | |
| 11 | TOTAL APPLIED COST (FED. ONLY) | 9,600,000 | 5,257,700 | 782,300 | 2,620,000 | 940,000 |
| 12 | Undistributed Costs | | 600 | -600 | | |
| 13 | TOTAL PROJECT COST (FED. ONLY) | 9,600,000 | 5,258,300 | 781,700 | 2,620,000 | 940,000 |
| 14 | Pending Adjustments - None | | | | | |
| 15 | TOTAL COST (FED. ONLY) | 9,600,000 | 5,258,300 | 781,700 | 2,620,000 | 940,000 |
| 16 | Undelivered Orders | | | 120,000 | -120,000 | |
| 17 | TOTAL OBLIGATIONS | | 5,258,300 | 901,700 | 2,500,000 | 940,000 |
| 18 | | | | | | |
| 19 | METHOD OF FINANCING | | | | | |
| 20 | Allocations | | 5,260,000 | 900,000 | | |
| 21 | Unobligated Carryover from Prior Year | | | 1,700 | | |
| 22 | Total Funds Available for Obligation | | | 901,700 | | |
| 23 | APPROPRIATION REQUIRED | | | | 2,500,000 | 940,000 |
| 24 | | | | | | |
| 25 | | | | | | |
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|---|---|---|---|
| EFFECTIVE DATE<br>JAN 1986 | DIVISION OHIO RIVER<br>DISTRICT HUNTINGTON | REGION OHIO<br>BASIN MUSKINGUM | PROJECT<br>NEWARK LPP, OHIO |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986

**APPROPRIATION TITLE:** Construction, General - Local Protection Projects (Flood Control)

**PROJECT:** Turtle Creek, Pennsylvania (Continuing)

**LOCATION AND DESCRIPTION:** The project is located in Allegheny and Westmoreland Counties near Pittsburgh, Pennsylvania. The protection facilities consist of channel improvements on lower Turtle Creek and lower Thompson Run. Five concrete drop structures were provided on Thompson Run, and six debris basins were constructed on Turtle Creek and its tributaries. The project was constructed during the period 1962-1967.

**AUTHORIZATION:** Flood Control Act of 1958 authorized the channel improvement project on Turtle Creek. The Fiscal Year 1985 Supplemental Appropriations Act specified that the Secretary of the Army, acting through the Chief of Engineers, is authorized and directed to repair and restore the Turtle Creek, Pennsylvania, local protection project.

**BENEFIT TO COST RATIO:** The remaining benefit-remaining cost ratio is not applicable since all the flood control benefits are presently accruing to the existing project and since the remaining work is needed to assure that the project functions to provide the authorized flood control purpose.

| SUMMARIZED FINANCIAL DATA | | | ACCUM. % of EST. FED. COST |
|---|---|---|---|
| - ORIGINAL PROJECT - | | | |
| Actual Federal Cost | | $15,351,000 | |
| Actual Non-Federal Cost | | 1,840,000 | |
| Cash Contributions | $ 0 | | |
| Other Costs | 1,840,000 | | |
| Total Actual Original Cost | | $17,191,000 | |
| - REPAIR AND RESTORATION WORK - | | | |
| Estimated Federal Cost | | $ 2,300,000 | |
| Estimated Non-Federal Cost | | 0 | |
| Total Estimated Cost | | $ 2,300,000 | |
| Total Estimated Project Cost | | $19,491,000 | |

| STATUS (1 January 1986) | PERCENT COMPLETE | COMPLETION SCHEDULE |
|---|---|---|
| Repair and Restore Channel | 0 | Jun 1989 |
| Entire Project | 0 | Jun 1989 |

Division: Ohio

District: Pittsburgh, PA

4 FEB 1986

Region: Ohio
Turtle Creek, PA

| SUMMARIZED FINANCIAL DATA | | ACCUM. % of EST. FED. COST |
|---|---|---|
| Federal Allocations to 30 Sep 85 | $15,351,000 | |
| Conference Allowance for FY 1986 | 0 | |
| Allocations for FY 1986 | 65,000 | |
| Allocations to Date | $15,416,000 | 87 |
| Allocations Requested for FY 1987 | $ 300,000 | 89 |
| Scheduled Balance to Complete After FY 1987 | 1,935,000 | |
| Unscheduled Balance to Complete After FY 1987 | 0 | |

EXISTING CONDITION: The project, constructed during the period 1962-1967, consists mainly of channel excavation; concrete and stone lining; cantilever and bar anchored steel sheet pile walls; concrete cantilever and gravity walls; alterations to the Westinghouse Electric Corporation backwater flood gate and sill; raising of railroad tracks and bridge; a new railroad bridge; protection of various bridge substructures, five concrete drop structures on Thompson Run; six debris basins on Turtle Creek and tributaries; the removal of buildings and stone walls; and the alterations of numerous utility lines and structures.

Since the project was completed and cleaned-out with Federal disaster funds following the June 1972 flooding and turned over to local interests on December 13, 1972, no sediment removal work has been accomplished by the local authority to date. Consequently, the flood height reducing capabilities have significantly deteriorated due to the accumulation of silt deposits. In effect, particularly through the lower reaches of the project below Thompson Run, the Turtle Creek channel improvement project can no longer contain the 100-year flood (16,800 cfs) as indicated by the National Flood Insurance Program through the communities of East Pittsburgh, Turtle Creek, and North Versailles Township.

In addition, deficiencies also still exist in other reaches of both Turtle Creek and Thompson Run. They include sedimentation, wild growth, eroded side slopes and damaged access ramps. Debris basins on Dirty Camp Run, Ardmore Boulevard and Thompson Run are completely filled in with sediment. Further, the drop structures on Thompson Run cannot serve their intended purpose due to the sediment buildup immediately below each drop structure.

JUSTIFICATION: Project conditions have changed to the point where flood hazard conditions are no longer as represented by project design and in the National Flood Insurance Program. The changed flood hazard conditions are documented by the periodic project inspections and a sediment monitoring program in the lower 8,800 feet of the Turtle Creek channel, JUSTIFICATION: (cont)

below Thompson Run, from 1975 through 1982. During this period, the Corps has taken 38 cross sections annually and computed the volume of sediment buildup in the channel. Using this detailed data, the total volume of sediment deposition which has accumulated over and above "As Built" conditions has been estimated to be almost 100,000 cubic yards in this reach alone. Annual inspections indicate no change or improvement in this severe sediment problem. In addition, hydrologic analyses have highlighted significant flood hazard changes.

The cumulative total of flood damages prevented by the project since completion are estimated to be over $75,000,000 through Fiscal Year 1985.

FISCAL YEAR 1987: The requested amount will be applied as follows:

| | |
|---|---|
| Lands and Damages (Investigations) | $ 10,000 |
| Engineering and Design | $250,000 |
| Supervision and Administration | $ 40,000 |
| TOTAL | $300,000 |

NON-FEDERAL COST: The Turtle Creek Flood Control Authority's involvement in the project restoration is expected to be minimal and limited to providing access and contractor work and disposal areas.

STATUS OF LOCAL COOPERATION: The Turtle Creek Flood Control Authority, as the local sponsor of the existing project, will be requested to furnish a current expression of interest and a reaffirmation that the Authority is legally and financially capable of providing the local cooperation requirements for both the restoration and subsequent operation and maintenance of the project.

COMPARISON OF FEDERAL COST ESTIMATES: The estimate for repairs and restoration of the Turtle Creek Flood Protection Project is the initial estimate to be presented to Congress.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT:

EIS: A brief assessment of potential impacts to determine if an EIS is required will be made in FY 86 during the Reconnaissance Study. NEPA documentation, whether an EIS or EA, will be accomplished in FY 87 to be included in the DPR.

Section 404: A brief assessment to determine if a Section 404(b)(1) Evaluation is required will be made in FY 86 during the Reconnaissance Study. If the proposed action is found to be subject to the provisions of Section 404 of the Clean Water Act, a Section 404(b)(1) Evaluation will be completed during preparation of the DPR in FY 87. The

**STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT:** (cont)

Section 404 provisions will be satisfied by preparing the Section 404(b)(1) Evaluation, issuing a Public Notice, obtaining State Certification and signature of the District Commander on the DPR in FY 87.

**OTHER INFORMATION:** The original project was constructed during the period 1962-1967 at a cost of $15,351,000.

## HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

**Division:** Ohio River
**District:** Pittsburgh

**Project:** Turtle Creek, PA

| Item | Estimates Presented to Congress ($1,000)<br>Original Baseline (1) | Cumulative Changes (2) | Last (3) | Incremental Change (4) | Current (5) |
|---|---|---|---|---|---|
| Federal Cost (Price Level) | $2,300.<br>(Oct 1985) | | No previous estimate presented to Congress. | | $2,300,000[1] |
| Reason for Change: | | | | | |
| a. Price Escalation | | | | | |
| b. Design Changes | | | | | |
| c. Additional Function Added Under General Authorization | | | | | |
| d. Authorized Modification | | | | | |
| e. Post Contract Award and Other Estimating Adjustments | | | | | |
| f. Schedule Changes | | | | | |
| g. Sundry | | | | | |
| h. Real Estate | | | | | |

[1] Excludes inflation through the construction period.

4 FEB 1986

REPORTS CONTROL SYMBOL:

| APPROPRIATION TITLE: CONSTRUCTION GENERAL | CLASSIFICATION: |
|---|---|
| CONSTRUCTION, GENERAL | LOCAL PROTECTION PROJECTS (FLOOD CONTROL) |

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19____ AND 19____

| LINE NO | ITEM (a) | PROJECT COST ESTIMATE (b) | TOTAL TO 30 SEP 19 85 (c) | CURRENT FY 19 86 (d) | BUDGET FY 19 87 (e) | BALANCE TO COMPLETE AFTER FY 19 87 (f) |
|---|---|---|---|---|---|---|
| 1 | Completed Work | 15,351,000 | 15,351,000 | | | |
| 2 | Lands and Damages | 10,000 | | | 10,000 | |
| 3 | Channel | 1,600,000 | | | | 1,600,000 |
| 4 | Engineering and Design | 400,000 | | 55,000 | 250,000 | 95,000 |
| 5 | Supervision and Administration | 290,000 | | 10,000 | 40,000 | 240,000 |
| 6 | Total Applied Cost (Federal Funds Only) | 17,651,000 | 15,351,000 | 65,000 | 300,000 | 1,935,000 |
| 7 | Undistributed Costs (None) | | | | | |
| 8 | Total Project Cost (Federal Funds Only) | 17,651,000 | 15,351,000 | 65,000 | 300,000 | 1,935,000 |
| 9 | Pending Adjustments (None) | | | | | |
| 10 | Total Cost (Federal Funds Only) | 17,651,000 | 15,351,000 | 65,000 | 300,000 | 1,935,000 |
| 11 | Undelivered Orders | | | | | |
| 12 | Total Obligations | | 15,351,000 | 65,000 | 300,000 | 1,935,000 |
| 13 | | | | | | |
| 14 | METHOD OF FINANCING | | | | | |
| 15 | ALLOCATIONS | | 15,351,000 | 65,000 | | |
| 16 | UNOBLIGATED CARRYOVER FROM PRIOR YEAR | | | | | |
| 17 | TOTAL FUNDS AVAILABLE FOR OBLIGATION | | | 65,000 | | |
| 18 | APPROPRIATION REQUIRED | | | | 300,000 | 1,935,000 |
| 19 | | | | | | |
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| EFFECTIVE DATE | DIVISION | REGION | PROJECT |
|---|---|---|---|
| 1 Jan 86 | OHIO RIVER<br>DISTRICT PITTSBURGH | OHIO<br>BASIN OHIO HEADWATERS | TURTLE CREEK, PENNSYLVANIA |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986

**APPROPRIATION TITLE:** Construction General - Local Protection Project (Flood Control)

**PROJECT:** Levisa and Tug Forks of the Big Sandy River and Upper Cumberland River, WV, VA & KY - (Continuing)

**LOCATION:** Levisa and Tug Forks are situated in southwestern West Virginia, southeastern Kentucky, and western Virginia. The two streams converge at the twin towns of Ft. Gay, West Virginia, and Louisa, Kentucky, to form the Big Sandy River. The Upper Cumberland River Basin encompasses about 1,977 square miles and extends about 132 miles from its origin at Harlan, KY, to Cumberland Falls.

**AUTHORIZATION:** Section 202 of the Energy and Water Development Appropriation Act of 1981.

**BENEFIT TO COST RATIO:** The remaining benefit-remaining cost ratio is not applicable because monetary benefits have not been quantified.

| SUMMARIZED FINANCIAL DATA | | | Accum. % of Est. Fed. Cost |
|---|---|---|---|
| Estimated Federal Cost | | $247,000,000 | |
| Estimated Non-Federal Cost | | $14,500,000 | |
| Cash Contribution | $14,500,000 | | |
| Other Costs | 0 | | |
| Total Estimated Project Cost | | $261,500,000 1/ | |
| Allocations to 30 September 1985 | | $ 66,919,000 | |
| Conference Allowance for FY 1986 | | 17,000,000 | |
| Allocation for FY 1986 | | $ 14,500,000 2/ | |
| Allocations to Date | | 81,419,000 | 33 |
| Allocation Requested for FY 1987 | | 22,500,000 | 42 |
| Scheduled Balance to Complete after FY 1987 | | 130,481,000 | |
| Unscheduled Balance to Complete after FY 1987 | | 12,600,000 | |

| STATUS (1 January 1986) | PERCENT COMPLETE | COMPLETION SCHEDULE |
|---|---|---|
| Williamson, WV | | |
| Lands and Damages | 44 | Sep 1990 |
| Relocations | - | Sep 1988 |
| Snagging and Clearing | - | Dec 1990 |
| Levees and Floodwalls | - | Jun 1992 |
| Pump Stations | 25 | Jun 1992 |
| Entire Project | 15 | Jun 1992 |
| Matewan, WV | | |
| Lands and Damages | 0 | Dec 1990 |
| Relocations | 0 | Sep 1990 |
| Levees and Floodwalls | 0 | Sep 1994 |
| Pump Stations | 0 | Sep 1994 |
| Entire Project | 0 | Sep 1994 |
| Pineville, KY | | |
| Lands and Damages | 83 | Mar 1987 |
| Relocations | 56 | Jun 1988 |
| Roads | 0 | Jun 1987 |
| Levees and Floodwalls | 8 | Jun 1988 |
| Pump Station | 26 | Jun 1988 |
| Cultural Resources | 43 | Sep 1987 |
| Entire Project | 44 | Jun 1988 |

1/ Costs of Williamson, WV, Matewan, WV, Pineville and Barbourville, KY, other high priority nonstructural measures, and other detailed studies.

2/ Reflects $2,500,000 reduction assigned as savings and slippage.

DIVISION: OHIO RIVER

DISTRICT: HUNTINGTON
NASHVILLE

REGION: OHIO

Levisa and Tug Forks of the Big Sandy River and Upper Cumberland River, WV, VA, and KY

4 FEB 1986

| | | |
|---|---|---|
| Barbourville, KY (Cutoff) | | |
| Lands and Damages | 100 | Jul 1984 |
| Relocations | 100 | Dec 1985 |
| Channels and Canals | 90 | Mar 1986 |
| Entire Project | 91 | Mar 1986 |
| Barbourville,KY(Levee/Fldwall) | 0 | Indefinite 1/ |
| Nonstructural Measures | 6 | Mar 1990 |
| Other Detailed Studies | 54 | Sep 1992 |

1/ Completion of Levee/Floodwall is indefinite pending a decision to initiate construction.

## PHYSICAL DATA

| | |
|---|---|
| **WILLIAMSON** | |
| **Williamson Floodwall**<br>Height - 22 feet (average)<br>Length - 3,900 feet<br>Pump Stations - 2 (50,000 and 120,000 GPM) | **Lands and Damages**<br>Acres - 12.99<br>Type - Urban |
| **West Williamson Floodwall**<br>Height - 17 feet (average)<br>Length - 6,237 feet<br>Pump Stations - 1 (40,000 GPM) | **Lands and Damages**<br>Acres - 46.37<br>Type - Urban |
| **Snagging and Clearing**<br>Length - 2.3 miles | **Lands and Damages**<br>Acres - 143.54<br>Type - Riverbank |
| **MATEWAN** | |
| **Fill/Wall**<br>Height - 13 feet (average)<br>Length - 2,500 feet<br>Pump Stations - 1 (110,000 GPM) | **Relocation**<br>Hwy 49 Bridge<br>**Lands and Damages**<br>Acres - 82.42<br>Type - Urban |
| **PINEVILLE** | |
| **Pineville Highway/Levee/Floodwall**<br>Height - 25 feet (average)<br>Length - 7,800 feet<br>**Wallsend Levee**<br>Height - 25 feet<br>Length - 4,300 feet | **Relocation**<br>Wallsend Bridge<br>Pine Street Bridge<br>**Lands and Damages**<br>Acres - 118<br>Type - Urban |

**BARBOURVILLE**

**Cutoff**
Type - High flow diversion
Dimensions - 150 feet bottom width
- 40 feet maximum depth
Length - 5,000 feet

**Lands and Damages**
Acres - 55
Type - Agricultural

**Levee/Floodwall**
Height - 26 feet (average)
Length - 19,536 feet

**Lands and Damages**
Acres - 11
Type - Urban

**Relocations**
Highway 459 Bridge

Nonstructural Measures - Primarily voluntary relocations from floodprone areas and floodproofing of unprotected developments suitable for such measures in the Williamson, WV, Matewan, WV, South Williamson, KY, Kermit, WV, Grundy, VA, Pineville, KY, Barbourville, KY and Harlan, KY areas. Specific physical data will be determined during preparation of project reports for each individual area.

## OTHER DETAILED STUDIES

Advance planning will continue at other locations in the authorized planning area to determine the extent of flood problems and to formulate advisable solutions to these problems.

## JUSTIFICATION:

Tug Fork - Historically, persistent repetitive flooding in the Tug Fork Valley has brought extensive damage to homes, and other cultural developments. During the past 25 years, major floods occurred in January 1957, March 1963, March 1967, April 1977, and May 1984. The 1977 flood was the flood of record along much of the Tug Fork. This devastating flood caused valley-wide damages approaching $200 million on a 1977 price level. Six hundred homes were totally destroyed and 4,700 homes were flooded. Physical losses from direct damage to non-residential buildings and contents exceeded $41 million. Over half of all damages occurred in Mingo County, West Virginia. Pike County, Kentucky had about $45 million. The recent May 1984 flood resulted in an estimated $117 million in damages along the Tug Fork. As in previous floods, the extensive bituminous coal mining industry of the basin was disrupted due to direct damage, interrupted transportation, and lost time because of diversions of the workforce to flood fighting and clean-up. Five of the seven counties within which the Tug Basin lies are designated as having substantial and persistent unemployment, with unemployment rates ranging from 17.3 percent to 27.8 percent.

Levisa Fork - Basically, the same persistent repetitive type flooding characteristic of the Tug Fork has plagued the Levisa Fork area. During the April 1977 flood, damage amounted to about $93 million, as measured in 1977 price levels. The May 1984 flood caused an additional $90 million in losses along the mainstem Levisa Fork, and its primary upstream tributary, Russell Fork. Impacts on residential properties, commercial and transportation facilities, and the mining industry were similar to those described to the Tug Fork areas. Seven of the ten counties within the Levisa drainage area are designated as having substantial and persistent unemployment, with rates ranging from 14.9 percent to 28.1 percent.

**Upper Cumberland** - The Pineville project will protect about 185 acres of urban property. The market value of protected structures is $25.7 million. Total damages in all categories amounted to $34.7 million for this area during the April 1977 event. At Barbourville, the existing project was sandbagged during the April 1977 flood event preventing major losses to some 700 acres of urban land containing structures valued at $52.4 million. The presently unprotected area is a mix of agriculture/urban land use and contains structures valued at over $6.0 million.

Counties located within reasonable commuting distance of the project which have been designated as redevelopment areas by the Secretary of Commerce are: Campbell and Claiborne Counties, Tennessee; Bell, Harlan, Knox, Letcher, and Whitley Counties, Kentucky; all designated as 401(a) 2, 8, that is, having substantial and persistent unemployment.

**FISCAL YEAR 1987:** The request amount will be applied as follows:

**Williamson, WV**

| | |
|---|---:|
| Continue Land Acquisition | $ 2,050,000 |
| Continue Relocations | 1,130,000 |
| Continue West Williamson Flood Wall | 3,670,000 |
| Initiate Snagging and Clearing | 0 |
| Engineering and Design | 950,000 |
| Supervision and Administration | 500,000 |
| Subtotal | $ 8,300,000 |

**Matewan, WV**

| | |
|---|---:|
| Initiate Land Acquisition | $ 100,000 |
| Initiate Relocations | 60,000 |
| Engineering & Design | 500,000 |
| Supervision & Administration | 40,000 |
| Subtotal | $ 700,000 |

**Pineville, KY**

| | |
|---|---:|
| Complete Land Acquisition | $ 37,000 |
| Continue Relocations | 1,843,000 |
| Initiate and Complete Roads | 12,000 |
| Continue construction of Levees and Floodwalls | 8,345,000 |
| Continue construction of Pumping Plants | 257,800 |
| Complete Cultural Resources Preservation | 44,900 |
| Engineering and Design | 70,000 |
| Supervision and Administration | 440,300 |
| Subtotal | $11,050,000 |

**Barbourville, KY - Levee/Floodwall**

| | |
|---|---|
| Engineering and Design | $ 270,000 |
| Supervision and Administration | 30,000 |
| Subtotal | $ 300,000 |
| **Other Detailed Studies** | $ 2,150,000 |
| TOTAL | $22,500,000 |

The funds requested are required for construction and detailed studies during the budget year. Work on high priority nonstructural elements will continue with available funds.

**NON-FEDERAL COSTS:** Non-Federal interests must assume operation and maintenance costs for all project works constructed under this authority. Average annual costs for operation and maintenance of the projects being implemented in Williamson and West Williamson, West Virginia, in the Tug Fork Valley are $34,000. Average annual costs for operation and maintenance of Pineville and Barbourville projects are $15,000 and $20,000, respectively.

In cooperation with the Commonwealth of Kentucky, an integrated highway/flood project is being developed for Pineville, Kentucky. The plan provides flood protection for Pineville and Wallsend communities in conjunction with a four-lane improvement to US Highway 25E through Pineville.

**STATUS OF LOCAL COOPERATION:** The City of Barbourville signed a 221 Agreement on 14 February 1984 and agreed to accept the role as project sponsor for operation and maintenance of the project after construction is complete.

Mingo County, West Virginia, signed a 221 Agreement on 2 March 1983 and agreed to act as project sponsor for operation and maintenance. The City of Williamson and Mingo County have agreed to enter into a sub-agreement transferring certain responsibilities to the City. Pike County, Kentucky, signed a 221 Agreement on 1 August 1983 agreeing to act as non-Federal sponsor for features of the project within its jurisdiction.

City of Pineville signed a 221 Agreement on 19 February 1983 and agreed to accept the role as project sponsor for operation and maintenance of the project after construction is complete. The Corps and the Commonwealth of Kentucky have executed a cost-sharing arrangement for the combined flood protection/four-lane highway project at Pineville.

**COMPARISON OF FEDERAL COST ESTIMATES:** The current Federal cost estimate of $247,000,000 is an increase of $14,000,000 from the latest estimate ($233,000,000) submitted to Congress (FY 1986). Changes are as follows: Williamson Area - Decrease of $28,500,000 includes a decrease of ($40,100,000) for adjustments in the estimated inflation allowances through the construction period and an increase of ($11,600,000) under post-contract award and other estimating adjustments consisting of increases of $12,400,000 in the Williamson CBD Levee and Floodwall as a result of extremely poor foundation conditions which necessitate construction of a sheet pile cellular type wall in lieu of an inverted T-type concrete wall, $2,000,000 in the Williamson CBD Pump Stations based on a change to natural gas powered pumps to counter probable loss of electrical power during flooding conditions and addition of piling supports for the pump station structures based on poor foundation conditions and $1,000,000 in the West Williamson Pump Station based on contract overruns partially offset by a decrease of $3,800,000 in the Williamson CBD Lands and Damages based on acquisition to date and firm appraisals for the remaining tracts required to accommodate the selected floodwall alignment; Matewan - Increase of $36,100,000 based on approval by ASA(CW) of the Matewan, WV, project element; Pineville - Decrease of $400,000 includes a decrease of ($1,866,000) for adjustments in the estimated inflation allowances through the construction period and an increase of ($1,466,000) under post-contract award and other constructing adjustments consisting of increases of $700,000 in Lands and Damages resulting from acquisition activity in the area which stimulated the activity and increased property values, $289,000 in Relocations based on actual bids of contracts and the addition of some items of work to the school facility contract to coordinate construction with other relocations and the levee contract; $99,000 in Pumping Plant based on award price plus contingencies and $800,000 in Engineering and Design based on poor foundation conditions which required additional sampling, testing and analysis partially offset by a decrease of $422,000 in the Levee and Floodwall based on award price plus contingencies; Other Detailed Studies - Increase of $6,400,000 includes a decrease of ($300,000) for adjustments in the estimated inflation allowance through the construction period and increases of ($4,700,000) for additional study efforts required as a result of authorized modifications based on Congressional direction contained in the FY 1984 Supplemental Appropriations Act to implement nonstructural measures at specific areas, and ($2,000,000) under post-contract award and other estimating adjustments consisting of $1,500,000 to resolve channel design problems at Grundy, incorporate revised hydraulic data for the Levisa Fork study and remaining requirements for the Matewan, Upper Tug Fork and Kermit studies and $500,000 based on Congressional direction and subsequent ASA(CW) guidance which as resulted in increased planning, engineering, management, and coordination requirements on the part of the Division Office. Nonstructural Work - Increase of $400,000 includes a decrease of ($1,500,000) for adjustments in the estimated inflation allowances through the construction period and an increase of ($1,900,000) under post-contract award and other estimating adjustments based on actual costs of completed work.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT:

Tug Fork (Including Williamson, WV) - The final Environmental Impact Statement was filed with EPA on 3 December 1982.

The provisions of Section 404 of the Clean Water Act were met by a Section 404(b)(1) Evaluation on 3 December 1982, a Public Notice on 7 January 1983 and Certifications from the States of West Virginia and Kentucky on 14 February 1983.

Pineville - The final Environmental Impact Statement was filed with EPA in December 1982.

The provisions of Section 404 of the Clean Water Act were met by a Section 404(b)(1) Evaluation in the final EIS submitted to EPA on 21 December 1982 and filed by EPA on 30 December 1982, a Public Notice on 19 February 1982 and Certification from the State of Kentucky on 25 March 1982.

Barbourville - The Finding of No Significant Impact (FONSI) was signed on 1 February 1984. The provisions of Section 404 of the Clean Water Act were met by a Section 404(b)(1) Evaluation in the Environmental Assessment and a Public Notice on 15 November 1983. Certification from the State of Kentucky was received in January 1984.

Environmental Assessments Impact Statements for other areas as needed will be scheduled as studies proceed.

OTHER INFORMATION: Funds to initate construction were allocated in FY 1981. The Urgent Supplemental Appropriations Act for FY 1984 (PL 98-332) provided $21,000,000 for nonstructural measures at this project. The total estimated cost of nonstructural work is $38,400,000.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: Ohio River
District: Huntington/Nashville

Project: Levisa and Tug Forks of the Big Sandy River and Upper Cumberland River, WV, VA, and KY

| | Estimate Presented to Congress ($1,000) | | | | |
|---|---|---|---|---|---|
| Item | Original Baseline | Cumulative Changes | Last | Incremental Change | Current |
| Federal Cost<br>(Price Level) | 191,000 3/<br>(Oct 1982) | | 233,000 3/ | | 247,000 3/ 4/ |
| Reasons for Change: | | (42,000) 4/ | | (14,000) 3/ | |
| a. Price Escalations | | -2,318.8 | | -43,766 | |
| b. Design Changes | | | | | |
| c. Additional Function Added Under General Authorization | | 37,500 | | | |
| d. Authorized Modification | | | | | |
| e. Post-Contract Award and Estimating Adjustments | | 6,818.8 1/ | | 57,766 2/ | |
| f. Schedule Changes | | | | | |
| g. Sundry | | | | | |
| h. Real Estate | | | | | |

1/ Includes the following: Williamson Area - Decreases of $11,500 in West Williamson floodwall based on realignment and construction on an embankment and $1,900 for low bid on West Williamson pump station partially offset by increases of $2,000 in Lands and $400 in Relocations both based on floodwall realignment, $1,000 in E&D and $100 in S&A; Pineville - Increases of $770 in Lands based on expanded acquisition program, $2,226.5 in Relocations of separate storm and sanitary collector lines, $3,025.3 in Levees and Floodwalls for extending the levee and increased quantities of sheetpile for the cutoff and $141 in Pump Plants for changes in pump sizes; Barbourville - Decrease of $380 in Lands based on realignment of the Cut-off, $2,917 based on awarded contract for the Cut-off, $102 in S&A offset by increases of $119 in Relocations for awarded contract, $404 in E&D and $13,900 based on approval of the Barbourville Levee/Floodwall; Other Detailed Studies - Increase of $1,332 for costs to date; Nonstructural Work - Increase of $35,700 based on Congressional authorization and funding.

2/ Includes the following: Williamson Area - Increases of $12,400 in Williamson CBD Levee & Floodwall based on poor soil conditions and change from inverted T-type concrete wall to sheet pile cell design, $2,000 in the Williamson CBD

Pump Stations based on change to natural gas powered pumps and $1,000 in West Williamson Pump Station based on contract overruns partially offset by a decrease of $3,800 in the Williamson CBD Lands based on acquisition to date and firm appraisals; Matewan - Increase of $36,100 based on approval by ASA(CW); Pineville - Increases of $700 in Lands based on acquisition activity increasing property values, $289 in Relocations for coordination of City and Corps work, $99 in Pumping Plants for contract award, and $800 in E&D partially offset by a decrease of $422 in the Levee and Floodwall based on awarded contract; Other Detailed Studies - Increase of $6,700 to resolve channel design problems at Grundy, incorporate revised hydraulic data for the Levisa Fork study, to study nonstructural measures at specific areas and to provide for increased management efforts by the Division Office; Nonstructural Work - Increase of $1,900 primarily based on actual costs of completed work.

3/ Includes $-43,766 for adjustments in the estimated inflation allowance through the construction period.

4/ Includes an allowance for estimated inflation through the construction period.

4 FEB 1985

REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: LOCAL PROTECTION PROJECTS (FLOOD CONTROL)

## SUMMARY CONS[illegible]ON PROGRAM (PB-1)

FISCAL Y[illegible]ND 19 87

| LINE NO | ITEM | PROJECT COST ESTIMATE | TOTAL TO 30 SEP 19 85 | CURRENT FY 19 86 | BUDGET FY 19 87 | BALANCE TO COMPLETE AFTER FY 19 87 |
|---|---|---|---|---|---|---|
| | (a) | (b) | (c) | (d) | (e) | (f) |
| 1 | WILLIAMSON AREA | | | | | |
| 2 | Lands and Damages | 8,700,000 | 3,104,800 | 1,125,200 | 2,050,000 | 2,420,000 |
| 3 | Relocations | 1,980,000 | 2,600 | 97,400 | 1,130,000 | 750,000 |
| 4 | Snagging and Clearing | 210,000 | | | | 210,000 |
| 5 | West Williamson Floodwall | 22,700,000 | | | 3,670,000 | 19,030,000 |
| 6 | West Williamson Pump Station | 3,800,000 | 2,275,700 | 1,524,300 | | |
| 7 | Williamson CBD Floodwall & Pump Station | 38,200,000 | | 1,000,000 | | 37,200,000 |
| 8 | Engineering and Design | 8,520,000 | 5,551,500 | 998,500 | 950,000 | 1,020,000 |
| 9 | Supervision and Administration | 4,190,000 | 874,400 | 305,600 | 500,000 | 2,510,000 |
| 10 | Sub-Total Williamson Area | 88,300,000 | 11,809,000 | 5,051,000 | 8,300,000 | 63,140,000 |
| 11 | | | | | | |
| 12 | MATEWAN | | | | | |
| 13 | Lands and Damages | 8,900,000 | | | 100,000 | 8,800,000 |
| 14 | Relocations | 1,260,000 | | | 60,000 | 1,200,000 |
| 15 | Levees and Floodwalls | 17,000,000 | | | | 17,000,000 |
| 16 | Pump Stations | 3,400,000 | | | | 3,400,000 |
| 17 | Engineering and Design | 3,620,000 | | 490,000 | 500,000 | 2,630,000 |
| 18 | Supervision - Administration | 1,920,000 | | 10,000 | 40,000 | 1,870,000 |
| 19 | Sub-Total Matewan | 36,100,000 | | 500,000 | 700,000 | 34,900,000 |
| 20 | | | | | | |
| 21 | PINEVILLE | | | | | |
| 22 | Lands and Damages | 9,337,000 | 7,295,200 | 1,704,800 | 337,000 | |
| 23 | Relocations | 9,422,600 | 3,593,700 | 2,468,900 | 2,329,100 | 1,030,900 |
| 24 | Roads | 16,500 | | | 16,500 | |
| 25 | Levees and Floodwalls | 24,557,000 | 1,719,600 | 3,120,400 | 10,335,500 | 9,381,500 |
| 26 | Pump Stations | 1,544,000 | 120,000 | 793,700 | 348,300 | 282,000 |
| 27 | Cultural Resources Preservation | 261,000 | 71,100 | 145,000 | 44,900 | |
| 28 | Engineering and Design | 6,888,000 | 5,686,900 | 1,017,200 | 150,000 | 33,900 |
| 29 | Supervision and Administration | 2,673,900 | 1,320,500 | 533,000 | 588,700 | 231,700 |
| 30 | Sub-Total Pineville | 54,700,000 | 19,807,000 | 9,783,000 | 14,150,000 | 10,960,000 |
| 31 | | | | | | |
| 32 | | | | | | |
| 33 | | | | | | |

| | | | |
|---|---|---|---|
| EFFECTIVE DATE<br>JAN 1986 | DIVISION OHIO RIVER<br>DISTRICT HUNTINGTON/NASHVILLE | REGION OHIO<br>BASIN BIG SANDY/UPPER CUMBERLAND | PROJECT TUG AND LEVISA FORKS OF THE BIG SANDY RIVER & UPPER CUMBERLAND RIVER, WV, VA, & KY |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986

REPORTS CONTROL SYMBOL: DAEN-CWB-13

| | |
|---|---|
| APPROPRIATION TITLE: CONSTRUCTION GENERAL | CLASSIFICATION: LOCAL PROTECTION PROJECTS (FLOOD CONTROL) |

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM (a) | PROJECT COST ESTIMATE (b) | TOTAL TO 30 SEP 19 85 (c) | CURRENT FY 19 86 (d) | BUDGET FY 19 87 (e) | BALANCE TO COMPLETE AFTER FY 19 87 (f) |
|---|---|---|---|---|---|---|
| 1 | BARBOURVILLE | | | | | |
| 2 | Lands and Damages | 860,000 | 357,900 | 35,100 | | 467,000 |
| 3 | Relocations | 1,450,000 | 188,000 | 262,000 | | 1,000,000 |
| 4 | Channels and Canals | 4,054,000 | 3,046,000 | 1,008,000 | | |
| 5 | Levees and Floodwalls | 9,140,000 | | | | 9,140,000 |
| 6 | Pump Stations | 1,000,000 | | | | 1,000,000 |
| 7 | Engineering and Design | 3,250,000 | 1,868,200 | 916,800 | 270,000 | 195,000 |
| 8 | Supervision and Administration | 1,546,000 | 402,200 | 315,800 | 30,000 | 798,000 |
| 9 | Sub-Total Barboursville | 21,300,000 | 5,862,300 | 2,537,700 | 300,000 | 12,600,000 |
| 10 | | | | | | |
| 11 | OTHER DETAILED STUDIES | 22,700,000 | 11,689,600 | 2,504,400 | 2,260,000 | 6,246,000 |
| 12 | | | | | | |
| 13 | NONSTRUCTURAL WORK | | | | | |
| 14 | | | | | | |
| 15 | WILLIAMSON, WV | 10,200,000 | 457,500 | 2,642,500 | 2,900,000 | 4,200,000 |
| 16 | | | | | | |
| 17 | MATEWAN, WV | 4,100,000 | 128,300 | 701,700 | 1,000,000 | 2,270,000 |
| 18 | | | | | | |
| 19 | SOUTH WILLIAMSON, WV | 3,900,000 | 99,100 | 240,900 | 450,000 | 3,110,000 |
| 20 | | | | | | |
| 21 | KERMIT, WV | 5,200,000 | 98,400 | 61,600 | 500,000 | 4,540,000 |
| 22 | | | | | | |
| 23 | GRUNDY, VA | 2,700,000 | 63,000 | 87,000 | 650,000 | 1,900,000 |
| 24 | | | | | | |
| 25 | PINEVILLE, KY | 3,600,000 | 153,400 | 931,600 | 1,625,000 | 890,000 |
| 26 | | | | | | |
| 27 | BARBOURVILLE, KY | 4,500,000 | 99,900 | 100,000 | 250,000 | 4,050,000 |
| 28 | | | | | | |
| 29 | HARLAN, KY | 4,200,000 | 408,600 | 391,400 | 1,700,000 | 1,700,000 |
| 30 | | | | | | |
| 31 | Sub-Total Nonstructural Work | 38,400,000 | 1,508,200 | 5,156,800 | 9,075,000 | 22,660,000 |
| 32 | | | | | | |
| 33 | | | | | | |

| | | | |
|---|---|---|---|
| EFFECTIVE DATE JAN 1986 | DIVISION OHIO RIVER<br>DISTRICT HUNTINGTON/NASHVILLE | REGION OHIO<br>BASIN BIG SANDY/CUMBERLAND | PROJECT LEVISA AND TUG FORKS OF THE BIG SANDY RIVER AND UPPER CUMBERLAND RIVER, WV, VA & KY |

ENG FORM 1 SEP 76 2200 (ER 11–2–240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986

REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: LOCAL PROTECTION PROJECTS (FLOOD CONTROL)

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM (a) | PROJECT COST ESTIMATE (b) | TOTAL TO 30 SEP 19 85 (c) | CURRENT FY 19 86 (d) | BUDGET FY 19 87 (e) | BALANCE TO COMPLETE AFTER FY 19 87 (f) |
|---|---|---|---|---|---|---|
| 1 | TOTAL PROJECT | | | | | |
| 2 | | | | | | |
| 3 | WILLIAMSON AREA | 88,300,000 | 11,809,000 | 5,051,000 | 8,300,000 | 63,140,000 |
| 4 | | | | | | |
| 5 | MATEWAN | 36,100,000 | | 500,000 | 700,000 | 34,900,000 |
| 6 | | | | | | |
| 7 | PINEVILLE | 54,700,000 | 19,807,000 | 9,783,000 | 14,150,000 | 10,960,000 |
| 8 | Federal | (40,200,000) | (14,484,100) | (5,855,900) | (11,050,000) | ( 8,810,000) |
| 9 | Non-Federal | (14,500,000) | ( 5,322,900) | (3,927,100) | ( 3,100,000) | ( 2,150,000) |
| 10 | | | | | | |
| 11 | BARBOURSVILLE | 21,300,000 | 5,862,300 | 2,537,700 | 300,000 | 12,600,000 |
| 12 | | | | | | |
| 13 | OTHER DETAILED STUDIES | 22,700,000 | 11,689,600 | 2,504,400 | 2,260,000 | 6,246,000 |
| 14 | | | | | | |
| 15 | NONSTRUCTURAL WORK | 38,400,000 | 1,508,200 | 5,156,800 | 9,075,000 | 22,660,000 |
| 16 | | | | | | |
| 17 | TOTAL APPLIED COST (Federal Funds and | | | | | |
| 18 | Non-Federal Contribution) | 261,500,000 | 50,676,100 | 25,532,900 | 34,785,000 | 150,506,000 |
| 19 | Undistributed Cost | | 192,400 | -182,400 | | -10,000 |
| 20 | TOTAL PROJECT COST (Federal Funds and | | | | | |
| 21 | Non-Federal Contribution) | 261,500,000 | 50,868,500 | 25,350,500 | 34,785,000 | 150,496,000 |
| 22 | Pending Adjustments - None | | | | | |
| 23 | TOTAL COST )Federal Funds and | | | | | |
| 24 | Non-Federal Contribution) | 261,500,000 | 50,868,500 | 25,350,500 | 34,785,000 | 150,496,000 |
| 25 | | | | | | |
| 26 | FEDERAL FUNDS | | | | | |
| 27 | TOTAL APPLIED COST | 247,000,000 | 45,353,200 | 21,605,800 | 31,685,000 | 148,356,000 |
| 28 | Undistributed Cost | | 178,400 | -168,400 | | -10,000 |
| 29 | TOTAL PROJECT COST | 247,000,000 | 45,531,600 | 21,437,400 | 31,685,000 | 148,346,000 |
| 30 | Pending Adjustments - None | | | | | |
| 31 | | | | | | |
| 32 | | | | | | |
| 33 | | | | | | |

| | | | |
|---|---|---|---|
| EFFECTIVE DATE<br>JAN 1986 | DIVISION OHIO RIVER<br>DISTRICT HUNTINGTON/NASHVILL | REGION OHIO<br>BASIN BIG SANDY/CUMBERLAND | PROJECT TUG AND LEVISA FORKS OF THE BIG SANDY RIVER AND UPPER CUMBERLAND RIVER, WV, WA, AND KY |

ENG FORM 1 SEP 76 2200 (ER 11–2–240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986

REPORTS CONTROL SYMBOL: DAEN-CWB-13

| APPROPRIATION TITLE: CONSTRUCTION GENERAL | CLASSIFICATION: LOCAL PROTECTION PROJECTS (FLOOD CONTROL) |
|---|---|

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM (a) | PROJECT COST ESTIMATE (b) | TOTAL TO 30 SEP 19 85 (c) | CURRENT FY 1986 (d) | BUDGET FY 1987 (e) | BALANCE TO COMPLETE AFTER FY 1987 (f) |
|---|---|---|---|---|---|---|
| 1 | TOTAL COST | 247,000,000 | 45,531,600 | 21,437,400 | 31,685,000 | 148,346,000 |
| 2 | Undelivered Orders |  | 1,508,800 | -1,393,000 | -110,000 | -5,000 |
| 3 | TOTAL OBLIGATIONS |  | 47,040,400 | 20,043,600 | 31,575,000 | 148,341,000 |
| 4 |  |  |  |  |  |  |
| 5 | NON-FEDERAL CONTRIBUTION |  |  |  |  |  |
| 6 | TOTAL APPLIED COST | 14,500,000 | 5,322,900 | 3,927,100 | 3,100,000 | 2,150,000 |
| 7 | Undistributed Cost |  | 14,000 | -14,000 |  |  |
| 8 | TOTAL PROJECT COST | 14,500,000 | 5,336,900 | 3,913,100 | 3,100,000 | 2,150,000 |
| 9 | Pending Adjustments - None |  |  |  |  |  |
| 10 | TOTAL COST | 14,500,000 | 5,336,900 | 3,913,100 | 3,100,000 | 2,150,000 |
| 11 | Undelivered Orders |  | 210,700 | -210,700 |  |  |
| 12 | TOTAL OBLIGATIONS |  | 5,547,600 | 3,702,400 | 3,100,000 | 2,150,000 |
| 13 |  |  |  |  |  |  |
| 14 | METHOD OF FINANCING |  |  |  |  |  |
| 15 | Federal Funds | 247,000,000 |  |  |  |  |
| 16 | Allocations |  | 66,919,000 | 14,500,000 |  |  |
| 17 | Unobligated Carryover from Prior Year |  |  | 19,878,600 | 14,335,000 | 5,260,000 |
| 18 | Total Funds Available for Obligation |  |  | 34,378,600 |  |  |
| 19 | Appropriation Required |  |  |  | 22,500,000 | 143,081,000 |
| 20 |  |  |  |  |  |  |
| 21 | NON - FEDERAL CONTRIBUTION | 14,500,000 |  |  |  |  |
| 22 | Contribution |  | 6,470,000 | 2,780,000 |  |  |
| 23 | Unobligated Carryover from Prior Year |  |  | 922,400 |  |  |
| 24 | Total Funds Available for Obligation |  |  | 3,702,400 |  |  |
| 25 | Contribution Required |  |  |  | 3,100,000 | 2,150,000 |
| 26 |  |  |  |  |  |  |
| 27 | 1/ Completion of the Barbourville levee/ |  |  |  |  |  |
| 28 | floodwall is indefinite pending a |  |  |  |  |  |
| 29 | decision to initiate construction. |  |  |  |  |  |
| 30 |  |  |  |  |  |  |
| 31 | 2/ Reflects $2,500,000 reduction |  |  |  |  |  |
| 32 | assigned as savings and slippage. |  |  |  |  |  |
| 33 |  |  |  |  |  |  |

| EFFECTIVE DATE | DIVISION | REGION | PROJECT |
|---|---|---|---|
| JAN 1986 | OHIO RIVER | OHIO | TUG AND LEVISA FORKS OF THE BIG SANDY RIVER AND UPPER CUMBERLAND RIVER, WV, VA, AND KY |
|  | DISTRICT HUNTINGTON/NASHVILLE | BASIN BIG SANDY/CUMBERLAND |  |

ENG FORM 1 SEP 78 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986

APPROPRIATION TITLE: Construction, General - Reservoirs (Flood Control)

PROJECT: R. D. Bailey Lake, West Virginia (Continuing)

LOCATION: The project is located in Wyoming County, West Virginia, on the Guyandot River about 108 miles above its confluence with the Ohio River.

AUTHORIZATION: Flood Control Act of 1962.

BENEFIT TO COST RATIO: The remaining benefit-remaining cost ratio is not applicable because the project is nearing completion. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1967) was 1.02 to 1. That ratio was based on R. D. Bailey Lake functioning independently in the Guyandot River Basin; and, as the next added project to the Ohio River System following projects complete, under construction, and in advanced planning stage as of 1963.

| SUMMARIZED FINANCIAL DATA | | Accum. % of Est. Fed. Cost |
|---|---|---|
| Estimated Federal Cost | $250,000,000 | |
| Estimated Non-Federal Cost | 0 | |
| Total Estimated Project Cost | $250,000,000 | |
| Allocations to 30 September 1985 | 215,972,000 | |
| Allocation for FY 1986 | 0 | |
| Allocations to Date | $215,972,000 | 86 |
| Appropriation Requested for FY 1987 | 33,000,000 | 100 |
| Scheduled Balance to Complete after FY 1987 | | |
| Unscheduled Balance to Complete after FY 1987 | 1,028,000 | |

| STATUS: (1 January 1986) | PERCENT COMPLETE | COMPLETION SCHEDULE |
|---|---|---|
| Lands and Damages | 99 | Oct 1986 |
| Relocations | 100 | |
| Reservoir | 100 | Dec 1985 |
| Dam | 100 | Oct 1983 |
| Roads | 100 | |
| Recreation | 99 | |
| Buildings & Grounds | | |
| Perm Oper Equip | 100 | |
| Entire Project | 99 | Oct 1986 |

DIVISION: OHIO RIVER DISTRICT: HUNTINGTON REGION: OHIO

R. D. Bailey Lake, West Virginia

4 FEB 1986

## PHYSICAL DATA

**Dam:** Type - Rolled rock fill with upstream concrete facing
Height - 310 feet (streambed)
Length - 1,410 feet

**Spillway:** Type - Uncontrolled - near right abutment
Crest Length - 300 feet
Design Discharge - 232,400 c.f.s.

**Reservoir Capacity:**

| | |
|---|---|
| Total Storage | - 203,700 acre-ft |
| Operational & Incidental Recreation | - 22,000 acre-ft |
| Seasonal (Summer-WQC) | - 12,200 acre-ft |
| Flood Control: | |
| Summer | - 169,500 acre-ft |
| Winter | - 181,700 acre-ft |

**Outlet Works**
Type - Circular tunnel through left abutment
Length - 1,905 ft. (incl transition)
Diameter - 18 ft.
Gates - Two 6'-0"

**Lands and Damages:** Acres - 19,310; Type - Primarily woodland; Improvements - Typical small modest farm dwellings.

**Relocations:** Roads 14.0 miles ($5,133,700); Railroads - 25.3 miles ($52,621,300); Cemeteries, Utilities, and Structures ($3,360,000).

**JUSTIFICATION:** The Guyandotte River Basin is subject to floods of a flashy nature which may occur at any time of the year. About 70 percent of the flood areas along the river contain improvements and the major flood problems concern damages thereto. The lower reaches of the river are also subject to Ohio River backwater flooding. Project will provide almost complete control of flooding downstream from the dam site and also provide substantial flood control benefits along the Ohio River. The severe flood of 1957 (flood of record in some reaches) caused damages estimated at $2,253,000 in the reach from proposed dam site to the confluence of the Guyandot River with the Ohio River. Under present state of development and price levels, the damages would amount to approximately $15,800,000. With reservoir in operation at the present time, all damages could be prevented upon recurrence of such a flood. The flood of March 1962 also inflicted heavy damage throughout the valley, and it is estimated that benefits of $675,000 in the Guyandot Valley alone would have accrued to the R. D. Bailey reservoir if the project had been in operation. The severe flood of 12-14 March 1963 was the flood of record along the main stem of the Guyandot River. Depth of flooding at Logan, West Virginia, exceeded the previous record by 3.5 feet, and total damages in the Guyandot Basin were estimated at $8,370,000. Had this project been in operation, over $5,650,000 of these damages would have been prevented. The April 1977 flood would have exceeded the flood of record by 0.2 feet at Man, 1.2 feet at Logan, and 4.4 feet at Branchland if the R. D. Bailey project had not acted as a retarding structure. Damages prevented in the Guyandot River Basin during the April 1977 flood due to R. D. Bailey were estimated to be $20,500,000. Benefits that would accrue from the R. D. Bailey reservoir for the Ohio River alone on recurrence of the record flood of 1937 would be about $107,200,000. Estimated average annual benefits for the project total $11,092,600.

4 FEB 1986

58-198 O - 86 - 5

| Benefits | Amount<br>(1 October 1982) | Benefits | Amount<br>(1 October 1982) | | |
|---|---|---|---|---|---|
| Flood Control | $8,976,000 | Recreation | $548,800 | | |
| Redevelopment | 897,400 | Fish and Wildlife | 44,000 | | |
| WQC | 626,400 | | | TOTAL BENEFITS | $11,092,600 |

FISCAL YEAR 1987: The requested amount will be applied as follows:

| | |
|---|---|
| Lands and Damages | $33,000,000 |

The funds requested are required for payment of a deficiency judgment and accrued interest during the budget year.

NON-FEDERAL COSTS: None.

STATUS OF LOCAL COOPERATION: Not applicable.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $250,000,000 is an increase of $55,000,000 over the latest estimate ($195,000,000) submitted to Congress (FY 1983). This change consisting entirely of post-contract award and other estimating adjustments includes increases of $32,839,200 in Lands and Damages for payment of a deficiency judgment and accrued interest; $22,999,400 in Dam for settlement of claim ($22,633,000) and contract overruns for Remedial Work ($359,400); $263,400 in Recreation for contract overruns; $310,200 in Supervision and Administration and $62,300 for undistributed costs. These increases were partially offset by decreases of $83,100 in Relocations; $1,027,400 in Reservoir; $2,100 in Roads; $4,800 in Buildings, Grounds and Utilities; $1,000 in Permanent Operating Equipment, all based on completed work and $356,100 in Engineering and Design.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The Final Environmental Impact Statement was filed with CEQ on 26 March 1975.

The provisions of Section 404 of the Clean Water Act were met by a Section 404(b)(1) Evaluation in March 1982, a Public Notice issued in April 1982, and a Certification from the State of West Virginia in June 1982.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1963, and for construction in FY 1967.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

**Division:** Ohio River
**District:** Huntington

**Project:** R. D. Bailey Lake, West Virginia

| Item | Estimate Presented to Congress ($1,000) | | | | |
|---|---|---|---|---|---|
| | Original Baseline | Cumulative Changes | Last | Incremental Change | Current |
| Federal Cost | 82,600 | | 195,000 | | 250,000 |
| (Price Level) | (Jul 1965) | | | | |
| Reasons for Change: | | (112,400) | | (55,000) | |
| a. Price Escalations | | 39,231 | | | |
| b. Design Changes | | 745 | | | |
| c. Additional Function Added Under General Authorization | | | | | |
| d. Authorized Modification | | | | | |
| e. Post-Contract Award and Other Estimating Adjustments | | 60,139 1/ | | 55,000 2/ | |
| f. Schedule Changes | | | | | |
| g. Sundry | | 1,950 3/ | | | |
| h. Real Estate | | 10,335 | | | |

1/ Consists of the following: $4,640 in Real Estate for fee purchase of coal in lieu of subordination ($3,300) purchase in lieu of providing access ($400) and increased condemnation deposits ($940); $14,310 in Relocations for bid prices ($5,740); overruns on railroad subcontract work and acceleration of railroad relocation ($1,585) and completed claims settlements with railroad relocation subcontractors ($6,985); $90 in Reservoir for addition of boundary monumentation; $38,290 in the Dam for bid prices ($2,950) and acceleration of dam and outlet works, contract overruns ($13,025); completion of the dam by a new contractor ($12,745); additional drilling and grouting and placement and removal of plastic cover for protection of the dam ($6,710); and for outlet works and stilling basin repairs ($2,860); $1,570 in Roads (Access) for deletion of highway across the dam and actual bid prices; $3,315 in Recreation for added sites, emphasis shift to camping, redesign to fit changed conditions, low bid and final contract costs; $2,155 in Buildings, Grounds, and Utilities for added O&M building and contract overruns; $480 in Permanent Operating Equipment for addition of permanent gauging stations and costs to date; $9,340 in Engineering and Design and $5,205 in Supervision and Administration both for costs to date, remaining requirements and to provide for payment to GSA for office space rental. These increases were partially

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: Ohio River  
District: Huntington

Project: R. D. Bailey Lake, West Virginia (Cont'd)

offset by decrease of $4,975 in Real Estate for decreased acreage requirements and essentially completed acquisition; $9,696 in Relocations for bid prices, realignment studies, liquidated damages, sale of track and remaining government responsibility for deferred maintenance and completed work; $175 in Reservoir for low bid and final costs; $3,850 in the dam for detailed quantity and unit price studies and bid prices, $105 in Roads for final costs $400 in Recreation for contingency reductions; and $55 in BG&U for final costs.

2/ Consists of $32,839.2 in Lands & Damages for payment of a deficiency judgment and accrued interest; $22,999.4 in Dam for settlement of claim ($22,633.0) and contract overruns for Remedial Work ($359.4); $263.4 in Recreation for contract overruns; $310.2 in S&A and $62.3 for undistributed costs. These increases were partially offset by decreases of $83.1 in Relocations; $1,027.4 in Reservoir; $2.1 in Roads; $4.8 in B.G.&U.; and 1.0 in P.O.E. all based on completed work and $356.1 in E&D.

3/ Consists of $1,650 in Real Estate to comply with PL 91-646 and $300 in Reservoir for addition of seeding and reforestation.

REPORTS CONTROL SYMBOL: DAEN-CWB-13

| | |
|---|---|
| APPROPRIATION TITLE: CONSTRUCTION GENERAL | CLASSIFICATION: RESERVOIRS, FLOOD CONTROL |

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO. | ITEM (a) | PROJECT COST ESTIMATE (b) | TOTAL TO 30 SEP 19 85 (c) | CURRENT FY 19 86 (d) | BUDGET FY 19 87 (e) | BALANCE TO COMPLETE AFTER FY 19 87 (f) |
|---|---|---|---|---|---|---|
| 1 | LANDS AND DAMAGES | 52,839,200 | 19,821,100 | 18,100 | 33,000,000 | |
| 2 | RELOCATIONS | 60,831,900 | 60,829,200 | 2,700 | | |
| 3 | RESERVOIR | 687,600 | 687,600 | | | |
| 4 | DAM | 95,979,400 | 95,916,900 | 62,500 | | |
| 5 | ROADS | 1,862,900 | 1,862,900 | | | |
| 6 | RECREATION | 8,833,400 | 7,804,700 | 188,700 | | 840,000 |
| 7 | BUILDINGS, GROUNDS AND UTILITIES | 2,945,200 | 2,945,200 | | | |
| 8 | PERMANENT OPERATING EQUIPMENT | 629,000 | 629,000 | | | |
| 9 | ENGINEERING AND DESIGN | 13,573,900 | 13,498,400 | 5,500 | | 70,000 |
| 10 | SUPERVISION AND ADMINISTRATION | 11,755,200 | 11,629,100 | 8,100 | | 118,000 |
| 11 | | | | | | |
| 12 | TOTAL APPLIED COST (FED. ONLY) | 249,937,700 | 215,624,100 | 285,600 | 33,000,000 | 1,028,000 |
| 13 | Undistributed Cost | 62,300 | 62,300 | | | |
| 14 | TOTAL PROJECT COST (FED. ONLY) | 250,000,000 | 215,686,400 | 285,600 | 33,000,000 | 1,028,000 |
| 15 | Pending Adjustments - None | | | | | |
| 16 | TOTAL COST (FED. ONLY) | 250,000,000 | 215,686,400 | 285,600 | 33,000,000 | |
| 17 | Undelivered Orders | | 875,200 | -275,200 | | |
| 18 | TOTAL OBLIGATIONS | | 215,961,600 | 10,400 | 33,000,000 | |
| 19 | | | | | | |
| 20 | METHOD OF FINANCING | | | | | |
| 21 | Allocation | | 215,972,000 | | | |
| 22 | Unobligated Carryover from Prior Year | | | 10,400 | | |
| 23 | Total Funds Available for Obligation | | | 10,400 | | |
| 24 | APPROPRIATION REQUIRED | | | | 33,000,000 | 1,028,000 1/ |
| 25 | | | | | | |
| 26 | 1/ Includes $1,028,000 for unscheduled work. | | | | | |
| 27 | | | | | | |
| 28 | | | | | | |
| 29 | | | | | | |
| 30 | | | | | | |
| 31 | | | | | | |
| 32 | | | | | | |
| 33 | | | | | | |

| | | | |
|---|---|---|---|
| EFFECTIVE DATE<br>JAN 1986 | DIVISION OHIO RIVER<br>DISTRICT HUNTINGTON | REGION OHIO<br>BASIN GUYANDOT | PROJECT<br>R. D. BAILEY LAKE, WEST VIRGINIA |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986

APPROPRIATION TITLE: Construction, General - Reservoirs (Flood Control)

PROJECT: Stonewall Jackson Lake, West Virginia (Continuing)

LOCATION: The project is located in Lewis County, northern West Virginia, on the West Fork River, which joins the Tygart River at Fairmont, West Virginia, to form the Monongahela River. The dam site is located at Brownsville, West Virginia.

AUTHORIZATION: 1966 Flood Control Act as amended by the River Basin Monetary Authorization Act of 1971 (P.L. 922-222) and the Water Resources Development Act of 1974.

BENEFIT TO COST RATIO: The remaining benefit-remaining cost ratio is 2.9 to 1 at 4-5/8 percent. The benefit-cost ratio for the fiscal year for which Congress appropriated initial land acquisition funds (FY 1970) was 1.7 to .. The ratio is based on Stonewall Jackson Lake functioning independently in the West Fork River Basin and as the last added increment to the existing reservoir system in the Monongahela River Basin as of 1970. Minor benefits which will accrue on the Ohio River have not been included in the benefit-cost ratio.

| SUMMARIZED FINANCIAL DATA | | | ACCUM. % OF EST. FED. COST |
|---|---|---|---|
| Estimated Total Appropriation Requirement $206,000,000 | | | |
| Future Non-Federal Reimbursement | $19,155,000 | | |
| Estimated Federal Cost (Ultimate) | | $186,845,000 | |
| Estimated Non-Federal Cost | | 19,155,000 | |
| Reimbursement: | | | |
| Water Supply | 4,200,000 | | |
| Recreation | 14,955,000 | | |
| Total Estimated Project Cost | | $206,000,000 | |
| Allocations to 30 Sep 1985 | | $135,610,000 | |
| Conference Allowance for FY 1986 $24,000,000 | | | |
| Allocation for FY 1986 | | 23,100,000 [1] | |

| STATUS: (1 January 1986) | PERCENT COMPLETE | COMPLETION SCHEDULE |
|---|---|---|
| Land and Damages | 93 | Sep 1987 |
| Relocations | 72 | Dec 1987 |
| Reservoirs | 12 | Dec 1987 |
| Dam | 84 | Sep 1987 |
| Roads | 100 | Jan 1984 |
| Recreation Facilities | 0 | Jun 1989 |
| Cultural Resources Preservation | 40 | Sep 1986 |
| Buildings, Grounds and Utilities | 0 | Jun 1989 |
| Permanent Operating Equipment | 9 | Mar 1987 |
| Entire Project | 68 | Jun 1989 |

[1] Reflects $3,600,000 reduction assigned as savings and slippage.

Region: Ohio
Division: Ohio River District: Pittsburgh Stonewall Jackson Lake, WV

4 FEB 1986

## SUMMARIZED FINANCIAL DATA

**Estimated Total Appropriation Requirement $206,000,000 (cont)**

| | | ACCUM. % OF EST. FED. COST |
|---|---|---|
| Allocation to Date | $158,710,000 | 77 |
| Allocation Requested for FY 1987 | $ 26,000,000 | 90 |
| Scheduled Balance to Complete after FY 1987 | $ 21,290,000 | |
| Unscheduled Balance to Complete after FY 1987 | $ 0 | |

## PHYSICAL DATA

**Dam:**
  Type-Concrete gravity
  Height-95 feet (above streambed)
  Length-620 feet

**Spillway:**
  Type-Uncontrolled Concrete gravity ogee
  Length-117 feet
  Capacity (Design Discharge)-27,800 cu.ft.per sec.

**Outlet Works**
  Type-Gated Sluices; 3 low level, 2 high
  Gates: Slide, 3.5 x 7.0 ft. (lower)
  2.5 x 4.0 ft. (upper)

| **Reservoir Capacity:** Total Storage | 74,650 acre-feet |
|---|---|
| Flood Control | |
| Summer | 26,480 acre-feet |
| Winter | 38,550 acre-feet |
| Water Supply, Water Quality and Recreation | 45,050 acre-feet |
| Permanent Storage | 3,120 acre-feet |
| **Relocations:** | |
| Roads - 25.0 miles | ($48,890,000) |
| Railroad - 3.2 miles | ($ 4,300,000) |
| Utility Lines, Cemeteries & School | ($34,365,000) |

**Lands and Damages:** Acres-20,849; Type-Predominantly agricultural and woodland; Improvements-Typical farm and residential units.

**JUSTIFICATION:** The West Fork River Basin, a headwater area of the Monongahela River Basin, is contained in Barbour, Harrison, Lewis, Marion, Taylor, and Upshur Counties. The basin has a total drainage area of 881 square miles. The area contained in the basin is more populated than the average for the State of West Virginia. Industrial development is based primarily on the extensive coal, gas and oil resources. Coal mining is the most important commercial activity and glass is the chief manufacturing industry. Other important manufacturing industries produce pulp and paper,

JUSTIFICATION (cont):

chemicals, machinery and metal products. The flood history and the flood damages for the West Fork River valley clearly indicate that the valley has a flood problem. The uncontrolled waters also are reflected in flood stages on the Monongahela River. Major flood control benefits would be realized in the flood plains of the West Fork and the upper Monongahela Rivers. The latest flood in the West Fork River Basin was the November 1985 flood and under natural conditions (without the Stonewall Jackson Lake Project) would have caused damages estimated at $36,877,000 of which about $26,968,000 would be prevented by the completed project. The existing partially completed project prevented damages estimated at $20,245,000. Water quality control features of the project would augment natural stream flow during periods of low flow, providing improvement of water quality beneficial to points downstream on the West Fork River, the Monongahela River throughout its length and, to a minor extent, to locations on the upper Ohio River. Reservoir storage would also be used for future water supply needs for Weston, West Virginia. Recreation would also be an important reservoir feature and substantial benefits would accrue to this project purpose. Lewis County, in which the project is located, and adjacent Braxton, Randolph, Harrison, Preston, and Webster Counties, West Virginia have been determined as eligible labor surplus areas under Defense Manpower Policy No. 4B and Executive Orders 10582 and 12073, 1 October 1985 to 30 September 1986, and are within a reasonable commuting distance of the project. The average annual benefits are as follows:

| Benefit | Amount (1 Oct 1985) | Benefit | Amount (1 Oct 1985) |
|---|---|---|---|
| Flood Control | $2,709,000 | Recreation | $1,190,000 |
| Water Supply | 131,000 | Area Redevelopment | 837,000 |
| Water Quality Control | 4,877,000 | Total | $9,746,000 |

FISCAL YEAR 1987: The requested amount will be applied as follows:

| | |
|---|---|
| Complete land acquisition | $ 1,500,000 |
| Continue relocations | 10,170,000 |
| Initiate reservoir clearing | 1,539,000 |
| Complete construction of dam | 1,307,000 |
| Continue construction of recreation facilities | 7,800,000 |
| Initiate and complete installation of permanent operating equipment | 347,000 |
| Initiate construction of buildings, grounds and utilities | 800,000 |
| Engineering and Design | 360,000 |
| Supervision and Administration | 2,177,000 |
| Total | $26,000,000 |

The funds requested are required for construction during the budget year.

NON-FEDERAL COST: Prior to construction, local interests are required to furnish assurances that they will make arrangements for repayment, under the provisions of the Water Supply Act of 1958, as amended, of that part of the construction cost and annual operation, maintenance and replacement costs allocated to municipal and industrial water supply, an amount presently estimated at $4,200,000 for construction; and $15,000 annually for operation, maintenance and replacement; administer project land and water areas for recreation and fish and wildlife enhancement pay, contribute in the kind or repay (which may be through user fees) with interest, one-half of the separable first cost of the reservoir project allocated to recreation and fish and wildlife enhancement, an amount presently estimated at $14,955,000, bear all costs of operation, maintenance and replacement of recreation and fish and wildlife land and facilities, currently estimated on average annual basis to be $1,117,500; exercise to the full extent of their legal capability, control against removal of streamflow made available for water quality control; and contribute to the control of pollution of streams subject to low flow augmentation by adequate treatment or other methods of controlling wastes at their source.

STATUS OF LOCAL COOPERATION: The requirements of Section 221 were amended in 1971 to exempt assurances for future demands for water supply pursuant to the Water Supply Act of 1958 from the contractual requirements of the Act. Accordingly, the City of Weston, West Virginia, has provided assurances that it will enter into a water supply contract with the Department of the Army within a period of time which will permit paying out the costs allocated to the water supply storage within the life of the project.

Local cooperation assurances for recreation cost sharing were executed by the Governor and Attorney General of West Virginia on 29 May 1973.

A recreation cost-sharing contract, in accordance with the requirements of the Federal Water Project Recreation Act, P.L. 89-72, was executed by the State of West Virginia on 27 March 1977.

Legislation relieving Stonewall Jackson Lake, WV project of the requirements of Section 221, P.L. 96-61 was contained in the Water Resources Development Act of 1974 signed by the President on 7 March 1974.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $206,000,000 is an increase of $3,000,000 over the latest estimate ($203,000,000) presented to Congress. This change includes an increase of $4,600,000 for Real Estate due to higher percentage of remaining tracts being acquired by condemnation, higher trial settlements and mineral costs; and an increase of $500,000 for post-contract award and other estimating adjustments consisting of award of contracts for Relocation of B&O RR Track and Appurtenances (+$400,000), Equitable Gas Company Phase 2 Access Roads (+$200,000), Relocation of WV Route 30 and Associated Roads - Section 3 (-$835,000), Relocation of B&O RR Track Raise and Communication Lines (-$400,000), and Equitable Gas Company Phase 2 Piping (+$800,000); and Final costs on contracts for Relocation of U.S. Route 19 and WV Routes 42 and 21 - Section 1 (+$280,000), Equitable Gas Company Wells (+$130,000) and Phase 1 Access Roads (-$75,000). This increase was offset by a decrease of -$2,100,000 for adjustments in the estimated inflation allowance through the construction period.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: A Final Environmental Impact Statement was filed with CEQ on 12 November 1971.

The provisions of Section 404 of the Clean Water Act have been met by completion of a Section 404(b)(1) evaluation. The preliminary Section 404(b)(1) evaluation was completed on 21 October 1980 which indicated that there would be no significant adverse impacts from the placement of fill into waters of the United States in conjunction with project construction. The District Commander circulated a Public Notice and requested State Water Quality Certification under Section 401 of the Clean Water Act on 6 August 1979. The District received Water Quality Certification from the State of West Virginia on 21 July 1980.

Following a 19 August 1980 appeal to the granting of the certification by the Upper West Fork River Watershed Association, West Virginia Department of Natural Resources stayed the certification on 25 August 1980. On 9 October 1980, West Virginia DNR denied the appeal and indicated that the certification was effective. The final 404(b) evaluation was signed by the District Commander on 21 October 1980. On 12 November 1981, the West Virginia Supreme Court held that the denial of the appeal was improper because the riparian rights of downstream landowners were affected. As a result of a consent order reached between West Virginia DNR, the Upper West Fork River Watershed Association and the Pittsburgh District, a final certification was issued on 3 June 1982.

A Supplemental Section 404(b)(1) evaluation addressing a small bridge fill necessitated by detailed engineering studies was accomplished in February 1984. A public notice was issued on 9 March 1984 and no adverse comments were received. The State of West Virginia waived water quality certification. The Final Supplemental Section 404(b)(1) evaluation report was signed by the District Commander on 6 March 1984.

OTHER INFORMATION: Funds to initiate preconstruction planning were allocated in FY 1968, and for land acquisition in FY 1970. The FY 1970 funds were placed in budgetary reserve and allotted in FY 1971. Funds to initiate construction were allocated in FY 1971.

On 21 April 1980, the National Wildlife Federation and four other organizations filed suit in the U.S. District Court for the District of Columbia, seeking an injunction to halt land acquisition and construction based upon allegations that (1) the interest rate used in the benefit cost analysis violates Section 80 of the Water Resources Development Act of 1974 (2) water quality benefits were included in the benefit cost analysis in violation of the procedures established in Section 102 of the Federal Water Pollution Control Act Amendments of 1972 (3) that congressional authorization for the project had expired and (4) the present scope of the project exceeds that authorized by Congress.

**OTHER INFORMATION (cont):**

Additionally, plaintiffs charged that the Corps in general has systematically violated Federal law in the planning and construction of its water resources and sought injunctive and declaratory relief to compel the Corps to change its methods of affixing interest rates on projects, computing B-C ratios, and making post authorization changes. The case was transferred to Northern District of West Virginia. Preliminary injunction hearing was held on 17 September 1980 and no injunction granted. The case was dismissed by consent of all parties on 12 February 1985.

4 FEB 1986

## HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

**Division:** Ohio River

**District:** Pittsburgh

Project: Stonewall Jackson Lake, W. Va.

| Item | Estimates Presented to Congress ($1,000)<br>Original Baseline | Cumulative Changes | Last | Incremental Change | Current |
|---|---|---|---|---|---|
| Federal Cost (Price Level) | 45,300 | | 203,000 1/ | | 206,000 1/ 2/ |
| Reason for Change: | | (157,700) 1/ | | (3,000) | |
| a. Price Escalation | | 98,700 | | -2,100 1/ | |
| b. Design Changes | | 26,568 | | | |
| c. Additions (Functions Added Under General Authorization) | | | | | |
| d. Authorized Modification | | | | | |
| e. Post-contract Award and Other Estimated Adjustments | | 6,823 | | 500 | |
| f. Schedule Changes | | | | | |
| g. Sundry | | 1,008 | | | |
| h. Real Estate | | 24,601 | | 4,600 | |

1/ Includes an allowance for estimated inflation through the construction period.
2/ Includes -$2,100 for adjustment and estimated allowance through the construction period.

4 FEB 1986

REPORTS CONTROL SYMBOL:

| | |
|---|---|
| APPROPRIATION TITLE: CONSTRUCTION GENERAL | CLASSIFICATION:<br>RESERVOIRS (FLOOD CONTROL) |

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19...... AND 19......

| LINE NO | ITEM | PROJECT COST ESTIMATE | TOTAL TO 30 SEP 19 85 | CURRENT FY 19 86 | BUDGET FY 19 87 | BALANCE TO COMPLETE AFTER FY 19 87 |
|---|---|---|---|---|---|---|
| | (a) | (b) | (c) | (d) | (e) | (f) |
| 1 | LANDS AND DAMAGES | 38,400,000 | 34,858,000 | 2,042,000 | 1,500,000 | |
| 2 | RELOCATIONS | 87,555,000 | 59,175,000 | 16,210,000 | 10,170,000 | 2,000,000 |
| 3 | RESERVOIRS | 2,070,000 | 178,000 | | 1,539,000 | 353,000 |
| 4 | DAM | 18,800,000 | 14,790,000 | 2,703,000 | 1,307,000 | |
| 5 | ROADS - SERVICE ROAD | 960,000 | 960,000 | | | |
| 6 | RECREATION FACILITIES (INITIAL) | 23,100,000 | | 500,000 | 7,800,000 | 14,800,000 |
| 7 | CULTURAL RESOURCES PRESERVATION | 760,000 | 165,000 | 595,000 | | |
| 8 | BUILDINGS, GROUNDS AND UTILITIES | 2,400,000 | 6,000 | | 800,000 | 1,594,000 |
| 9 | PERMANENT OPERATING EQUIPMENT | 380,000 | 33,000 | | 347,000 | |
| 10 | ENGINEERING AND DESIGN | 19,550,000 | 17,790,000 | 1,000,000 | 360,000 | 400,000 |
| 11 | SUPERVISION AND ADMINISTRATION | 12,025,000 | 5,750,000 | 1,955,000 | 2,177,000 | 2,143,000 |
| 12 | TOTAL APPLIED COST (Federal Funds Only) | 206,000,000 | 133,705,000 | 25,005,000 | 26,000,000 | 21,290,000 |
| 13 | Undistributed Costs (None) | | | | | |
| 14 | TOTAL PROJECT COST (Federal Funds Only) | 206,000,000 | 133,705,000 | 25,005,000 | 26,000,000 | 21,290,000 |
| 15 | Pending Adjustments (None) | | | | | |
| 16 | TOTAL COST (Federal Funds Only) | 206,000,000 | 133,705,000 | 25,005,000 | 26,000,000 | 21,290,000 |
| 17 | Undelivered Orders | | 1,708,000 | 1,708,000 | | |
| 18 | TOTAL OBLIGATIONS | | 135,413,000 | 23,297,000 | 26,000,000 | 21,290,000 |
| 19 | | | | | | |
| 20 | METHOD OF FINANCING | | | | | |
| 21 | ALLOCATIONS | | 135,610,000 | 23,100,000[1] | | |
| 22 | UNOBLIGATED CARRYOVER FROM PRIOR YEAR | | | 197,000 | | |
| 23 | TOTAL FUNDS AVAILABLE FOR OBLIGATION | | | 23,297,000 | | |
| 24 | APPROPRIATIONS REQUIRED | | | | 26,000,000 | 21,290,000 |
| 25 | | | | | | |
| 26 | | | | | | |
| 27 | [1] Reflects $3,600,000 reduction assigned as savings and slippage. | | | | | |
| 28 | | | | | | |
| 29 | | | | | | |
| 30 | | | | | | |
| 31 | | | | | | |
| 32 | | | | | | |
| 33 | | | | | | |

| | | | |
|---|---|---|---|
| EFFECTIVE DATE<br>2 Jan 86 | DIVISION Ohio River<br>DISTRICT Pittsburgh | REGION Ohio<br>BASIN Ohio Headwaters | PROJECT<br>Stonewall Jackson Lake, WV |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE.

4 FEB 1986

APPROPRIATION TITLE: Construction, General - Locks and Dams (Major Rehabilitation - Navigation)

PROJECT: Locks and Dam 53, Illinois and Kentucky (Major Rehabilitation) (Continuing)

LOCATION: Locks and Dam 53 are located on the Ohio River in Pulaski County, Illinois, and Ballard County, Kentucky, about 19 miles upstream from the junction with the Mississippi River. This location is at mile 962.6 below Pittsburgh, Pennsylvania, and is upstream from Cairo, Illinois.

AUTHORIZATION: 1909 River and Harbor Act (Sec. 6) approved 3 March 1909 as amended by the Rivers and Harbor Acts approved 25 June 1910 and 18 July 1918. The new temporary 1200-foot lock was approved by the Secretary of the Army 19 June 1972, as a modification to the Mound City Lock and Dam project.

BENEFIT-COST RATIO: The remaining benefit-remaining cost ratio is not applicable because monetary benefits have not been quantified.

| SUMMARIZED FINANCIAL DATA | | | Accum. % of Est. Fed. Cost |
|---|---|---|---|
| Estimated Federal Cost | | $ 9,240,000 | |
| Estimated Non-Federal Cost | | 0 | |
| Total Estimated Project Cost | | $ 9,240,000 | |
| Allocations to 30 September 1985 | | $ 4,294,000 | |
| Conference Allowance for FY 1985 | $935,000 | | |
| Allocation for FY 1986 | | 935,000 | |
| Allocations to Date | | $ 5,229,000 | 56 |
| Allocation Requested for FY 1987 | | 1,700,000 | 75 |
| Scheduled Balance to Complete after FY 1987 | | $ 2,311,000 | 100 |
| Unscheduled Balance to Complete after FY 1987 | | 0 | |

| STATUS (1January 1986) | PERCENT COMPLETE | COMPLETION SCHEDULE |
|---|---|---|
| Dam | 33 | Mar 1989 |
| Locks | 100 | |
| Entire Project | 45 | Sep 1989 |

PRESENT CONDITION: The existing project consists of a movable dam 3,610 feet long made up of a 932-foot navigable pass section, a 340-foot Chanoine weir section, a 160-foot Bebout weir section, two 91-foot Beartrap sections, a 102-foot fixed weir section, and a 1,894-foot stone weir section; a landward lock 110 feet by 600 feet; and a riverward temporary lock 110 feet by 1200 feet, both with lifts of 13.4 feet. The dam and smaller lock have been in operation since 1929 while the larger temporary lock was placed in operation November 1980. The rehabilitation work involves structural repairs to and replacement of several components of the dam, restoration and new gates for the old lock, and replacement of mechanical and electrical equipment associated with operation of the dam and locks.

DIVISION: Ohio River DISTRICT: Louisville REGION: Ohio

4 FEB 1986

JUSTIFICATION: The Locks and Dam 53 project provides navigational capability to the commercial, government and private sectors on the lower Ohio River between Brookport and Cairo, Illinois. This project has been maintained in service by a vigorous maintenance program of repair; however, due to obsolescence of the structures, a major navigation problem with a severe impact on water transportation and the national economy would exist if the rehabilitation items deteriorated to such an extent that failure occurred. The rehabilitation will safeguard the integrity of the project and enable it to continue to maintain navigation, approximately 50 to 60 million tons yearly, on the lower Ohio River for about 15 years with a normal maintenance program.

FISCAL YEAR 1987: The requested amount will be applied to:

| | |
|---|---|
| Continue repairs to beartraps, replacing leaves and installing machinery (Dam) | 1,422,600 |
| Continue installation of wicket assemblies (Dam) | 23,000 |
| Engineering and Design | 30,000 |
| Supervision and Administration | 225,000 |
| Total | $1,700,000 |

The funds requested are required for construction during the budget year.

NON-FEDERAL COSTS: None.

STATUS OF LOCAL COOPERATION: None required.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $9,240,000 is a increase of $3,210,000 over the latest ($6,030,000) presented to Congress (FY 1986). This change includes an increase of $3,695,000 for design changes consisting of increases of ($3,310,000) for replacing instead of repairing the two beartrap leaves and using a upstream and downstream cofferdam construction plan in place of using the existing severly deteriorated and unsafe poiree dams and ($154,000) for engineering and design and ($231,000) for supervision and administration associated therewith and $85,000 for adjustment in the inflation allowance through the construction period; partially offset by a decrease of $570,000 for post contract award and other estimating adjustments made up of ($330,100) for savings on the installation of wickets for the dam and miter gates for the locks, ($301,600) for inspection of the beartrap leaves and machinery, and ($63,800) for savings on hydraulic and electrical systems for operations building, which were partially offset by increases of ($34,400) for new piston rods for the miter gates operating machinery and miscellaneious items, and ($91,100) for reanalysis of supervision and administration requirements.

STATUS OF ENVIRONMENTAL IMPACT STATEMENTS AND COMPLIANCE WITH CLEAN WATER ACT: An Environmental Impact Statement was prepared on the continued operation and maintenance of the Ohio River Navigation System. The Locks and Dam 53 project is part of this system and the rehabilitation work on this project was covered in the system impact statement. The final EIS for the Ohio River Navigation System was filed with EPA on 7 February 1980.

The provisions of Section 404 of the Clean Water Act do not apply, because the new work is scheduled for FY 1987 does not involve the placement of fill material or discharge of dredged material into the waters of the United States.

OTHER INFORMATION Funds to initiate major rehabilitation were provided by transfer in FY 1979 with appropriation for continuing rehabilitation in FY 1980.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: Ohio River
District: Louisville

Project: Locks and Dam 53, IL and KY, (Major Rehabilitation)

| | Estimates Presented to Congress ($1,000) | | | | |
|---|---|---|---|---|---|
| Item | Original Baseline | Cumulative Changes | Last | Incremental Change | Current |
| Federal Cost<br>(Price Level) | 5,900<br>(Oct 1978) | | 6,030 1/ | | 9,240 1/2/ |
| Reason for Change: | | ( 130) 1/ | | (3,210) 2/ | |
| a. Price Escalation | | 1,827 | | 85 | |
| b. Design Changes | | - 632 | | 3,695 | |
| c. Additional Function Added Under General Authorization | | | | | |
| d. Authorized Modification | | | | | |
| e. Post Contract Award and Other Estimating Adjustments | | -1,065 | | -570 | |
| f. Schedule Changes | | | | | |
| g. Sundry | | | | | |
| h. Real Estate | | | | | |

1/ Includes an allowance for estimated inflation through the construction period

2/ Includes $85 for adjustments in the estimated inflation allowance through the construction period.

4 FEB 1986

REPORTS CONTROL SYMBOL: DAEN-CWB-13

| | |
|---|---|
| APPROPRIATION TITLE: CONSTRUCTION GENERAL | CLASSIFICATION: MAJOR REHABILITATION, NAVIGATION LOCKS AND DAMS |

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO. | ITEM (a) | PROJECT COST ESTIMATE (b) | TOTAL TO 30 SEP 19 85 (c) | CURRENT FY 19 86 (d) | BUDGET FY 19 87 (e) | BALANCE TO COMPLETE AFTER FY 19 87 (f) |
|---|---|---|---|---|---|---|
| 1 | Dam | 6,626.0 | 1,975.7 | 235.9 | 2,331.9 | 2,082.5 |
| 2 | Locks | 1,509.1 | 1,509.1 | | | |
| 3 | Engineering and Design 1/ | 450.3 | 248.8 | 152.0 | 30.0 | 19.5 |
| 4 | Supervision and Administration | 654.6 | 180.6 | 40.0 | 225.0 | 209.0 |
| 5 | Total Applied Cost (Fed Funds Only) | 9,240.0 | 3,914.2 | 427.9 | 2,586.9 | 2,311.0 |
| 6 | Undistributed Cost Constr Facilities | | +0.9 | -0.9 | | |
| 7 | Total Project Cost (Fed Funds Only) | 9,240.0 | 3,915.1 | 427.0 | 2,586.9 | 2,311.0 |
| 8 | Pending Adjustments - None | | | | | |
| 9 | Total Cost (Fed Funds Only) | 9,240.0 | 3,915.1 | 427.0 | 2,586.9 | 2,311.0 |
| 10 | Undelivered Orders | | +201.6 | -201.6 | | |
| 11 | Total Obligations | 9,240.0 | 4,116.7 | 225.4 | 2,586.9 | 2,311.0 |
| 12 | | | | | | |
| 13 | METHOD OF FINANCING: | | | | | |
| 14 | ALLOCATIONS | | 4,294.0 | 935.0 | | |
| 15 | UNOBLIGATED CARRYOVER FROM PRIOR YEAR | | | 177.3 | 886.9 | |
| 16 | TOTAL FUNDS AVAILABLE FOR OBLIGATION | | | 1,112.3 | | |
| 17 | APPROPRIATIONS REQUIRED | | | | 1,700.0 | 2,311.0 |
| 18 | | | | | | |
| 19 | | | | | | |
| 20 | | | | | | |
| 21 | 1/ Engineering & Design accomplished with O&M, General funds prior to construction, not included. | | | | | |
| 22 | | | | | | |
| 23 | | | | | | |
| 24 | | | | | | |
| 25 | | | | | | |
| 26 | | | | | | |
| 27 | | | | | | |
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| 31 | | | | | | |
| 32 | | | | | | |
| 33 | | | | | | |

| | | | |
|---|---|---|---|
| EFFECTIVE DATE 1 JAN 86 | DIVISION OHIO RIVER<br>DISTRICT LOUISVILLE | REGION OHIO<br>BASIN OHIO MAIN STEM | PROJECT LOCKS AND DAM 53, ILLINOIS & KENTUCKY (MAJOR REHABILITATION) |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986

APPROPRIATION TITLE: Construction, General - Major Rehabilitation (Flood Control)

PROJECT: Muskingum River Lakes, Ohio (Major Rehabilitation Continuing)

LOCATION The Muskingum River Basin occupies 8,051 square miles in eastern Ohio with its headwaters originating approximately 30 miles south of Lake Erie. The Muskingum River flows into the Ohio River 172 miles below Pittsburgh, Pennsylvania.

AUTHORIZATION: Flood Control Act of 1938.

BENEFIT TO COST RATIO: The remaining benefit-remaining cost ratio is not applicable because monetary benefits have not been quantified.

| SUMMARIZED FINANCIAL DATA | | | Accum. % of Est. Fed. Cost |
|---|---|---|---|
| Estimated Federal Cost | | $24,900,000 | |
| Estimated Non-Federal Cost | | 0 | |
| Total Estimated Project Cost | | $24,900,000 | |
| Allocations to 30 September 1985 | | 18,481,000 | |
| Conference Allowance for FY 1986 | $2,200,000 | | |
| Allocation for FY 1986 | | 1,700,000 1/ | |
| Allocations to Date | | $20,181,000 | 81 |
| Allocation Requested for FY 1987 | | 2,500,000 | 91 |
| Scheduled Balance to Complete after FY 1987 | | 2,219,000 | |
| Unscheduled Balance to Complete after FY 1987 | | 0 | |

| STATUS: (1 January 1986) | PERCENT COMPLETE | COMPLETION SCHEDULE |
|---|---|---|
| Tappan | 100 | |
| Leesville | 100 | |
| Beach City | 100 | |
| Clendening | 100 | |
| Dover | 100 | |
| Charles Mill | 100 | |
| Bolivar | 100 | |
| Mohawk | 25 | Sep 1988 |
| Senecaville | 100 | |
| Mohicanville | 100 | |
| Wills Creek | 10 | Dec 1987 |
| Entire Project | 60 | Sep 1988 |

1/ Reflects a reduction of $500,000 for Savings and Slippage.

PRESENT CONDITION:

Embankment stability problems and other deficiencies exist at all of the 14 original Muskingum River projects which were constructed prior to 1940. Corrective measures involve relief wells and/or downstream blankets for the solution of underseepage problems, abutment grouting for leakage, construction deficiency corrections and construction to assure

PRESENT CONDITION (Cont'd): Embankment stability under the originally designed maximum pool conditions. A listing of rehabilitation work at each of the projects follows:

Beach City Lake - Railroad closure deficiencies at the left abutment of the dam 1/ and relief wells 1/.
Bolivar Dam - Relief wells and blanket 1/.
Charles Mill Lake - Downstream blanket 1/.
Clendening Lake - Downstream blanket 1/, abutment grouting 1/, and relief wells 1/.
Dover Dam - Zoar diversion dam corrective measures 1/.
Leesville Lake - Relief wells 1/ and abutment grouting 1/.
Mohawk Dam - Relief wells 1/, downstream blanket 1/ and dam stabilization.
Mohicanville Dam - Raise Dike No. 2 (Part 1) 1/, Part 2 1/ and downstream blanket 1/.
Senecaville Lake - Downstream blanket 1/ and relief wells 1/.
Tappan Lake - Relief wells 1/.
Wills Creek Lake - Relief wells.

1/ Complete

JUSTIFICATION: The periodic inspection program conducted on all completed projects involves inspections for safety of embankments. Obvious underseepage problems have been encountered in the older Muskingum River Basin projects and flooding in July 1969 uncovered the existence of construction deficiencies at three locations. The quantity of uncontrolled seepage at substantially less than full pool conditions has generated alarm as to embankment stability under designed full pool conditions. The current program involves explorations and testing to determine the required corrective measures, followed by construction activities for stabilization of the pertinent dams, dikes and/or levees.

FISCAL YEAR 1987: The requested amount will be applied as follows:

| | | |
|---|---|---|
| Continue Dam Stability work | | $2,295,000 |
| Supervision and Administration | | 205,000 |
| | TOTAL | $2,500,000 |

The funds requested are required for construction during the budget year.

NON-FEDERAL COSTS: None.

STATUS OF LOCAL COOPERATION: Not applicable.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $24,900,000 is a decrease of $19,300,000 from the latest estimate (44,200,000) submitted to Congress (FY 1986). This change includes a decrease of $5,550,000 for adjustments in the estimated inflation allowance through the construction period and a decrease of $13,750,000 under post-contract award and other estimating adjustments consisting of decreases of ($9,440,000) in the Dam, ($2,130,000) in Dikes and Levees, ($1,245,000) in Engineering and Design and ($1,305,000) in Supervision and Administration, all based on completing the Mohawk Dam stabilization and Wills Creek relief wells under the major rehabilitation program and performing all such remaining work under the Operation and Maintenance program, partially offset by an increase of $370,000 for miscellaneous undistributed costs consisting primarily of construction inspection facilities.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The Final Environmental Impact Statement for the Muskingum River Basin projects was filed with CEQ on 5 July 1977. The FEIS notes deficiencies exist pursuant to present day design criteria and that studies are being conducted to evaluate remedial needs. The FEIS further states that as any subsequent corrective needs are identified they will be evaluated and if considered significant addressed by a supplement to the FEIS. To date Tappan, Leesville, Beach City, Clendening, Dover, Charles Mill, Senecaville, Mohicanville, Mohawk and Bolivar have been so evaluated and determined that a supplement is not required. An evaluation of Wills Creek is necessary prior to relief wells rehab work.

The provisions of Section 404 of the Clean Water Act do not apply because the project improvements do not involve the placement of fill material or the discharge of dredged material into the waters of the United States.

OTHER INFORMATION: Funds to initiate Major Rehabilitation were allocated in FY 1976. Some deficiency and underseepage problems were corrected with Operation and Maintenance (O&M) funds prior to FY 1976.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: Ohio River
District: Huntington

Project: Muskingum River Lakes, Ohio (Rehabilitation)

| Item | Original Baseline | Cumulative Changes | Last | Incremental Change | Current |
|---|---|---|---|---|---|
| | Estimate Presented to Congress ($1,000) | | | | |
| Federal Cost<br>(Price Level) | 1,740<br>(Jul 1974) | | 44,200 4/ | | 24,900 3/ 4/ |
| Reasons for Change: | | (42,400) 4/ | | (-19,300) 3/ | |
| a. Price Escalations | | 30,597.2 | | -5,550 | |
| b. Design Changes | | 3,130.0 | | | |
| c. Additional Function Added Under General Authorization | | 41,634.7 | | | |
| d. Authorized Modification | | | | | |
| e. Post-Contract Award and Other Estimating Adjustments | | -32,901.9 1/ | | -13,750 2/ | |
| f. Schedule Changes | | | | | |
| g. Sundry | | | | | |
| h. Real Estate | | | | | |

1/ Includes decreases of $41,895.8 in Dam based on deletion of dam stability work and final costs and $890 in S&A partially offset by increases of $108 in Lands and Damages for cost to date; $52.7 in Relocations for Beach City railroad closure; $1,602.7 in Dam based on addition of downstream blanket at one project, bid price and completed design; $760.4 in Dikes and Levees based on status of design; $7,355.1 in E&D and $5 in S&A.

2/ Decreases of $9,440.4 in Dam, $2,130.0 in Dikes and Levees, $1,245.0 in E&D, $1,305.0 in S&A all based on performing future work under the O&M program offset by an increase of $370.0 for Misc. Undistributed Costs.

3/ Includes $-5,550 for adjustments in the estimated inflation allowance through the construction period.

4/ Includes an allowance for estimated inflation through the construction period.

REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: MAJOR REHABILITATION

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM (a) | PROJECT COST ESTIMATE (b) | TOTAL TO 30 SEP 19 85 (c) | CURRENT FY 19 86 (d) | BUDGET FY 19 87 (e) | BALANCE TO COMPLETE AFTER FY 19 87 (f) |
|---|---|---|---|---|---|---|
| 1 | LANDS AND DAMAGES | 120,000 | 120,000 | | | |
| 2 | RELOCATIONS | 52,700 | 52,700 | | | |
| 3 | DAM STABILIZATION | 12,280,300 | 6,705,300 | 835,000 | 2,570,000 | 2,170,000 |
| 4 | DIKES AND LEVEES | 1,990,400 | 1,898,100 | 92,300 | | |
| 5 | ENGINEERING AND DESIGN | 7,289,800 | 6,797,400 | 492,400 | | |
| 6 | SUPERVISION AND ADMINISTRATION | 2,796,800 | 2,331,400 | 190,400 | 205,000 | 70,000 |
| 7 | | | | | | |
| 8 | TOTAL APPLIED COST (FED. ONLY) | 24,530,000 | 17,904,900 | 1,610,100 | 2,775,000 | 2,240,000 |
| 9 | Undistributed Cost | 370,000 | 332,300 | 13,700 | 45,000 | -21,000 |
| 10 | TOTAL PROJECT COST (FED. ONLY) | 24,900,000 | 18,237,200 | 1,623,800 | 2,820,000 | 2,219,000 |
| 11 | Pending Adjustments - None | | | | | |
| 12 | TOTAL COST (FED. ONLY) | 24,900,000 | 18,237,200 | 1,623,800 | 2,820,000 | 2,219,000 |
| 13 | Undelivered Orders | | 216,300 | 103,700 | -320,000 | |
| 14 | TOTAL OBLIGATIONS | | 18,453,500 | 1,727,500 | 2,500,000 | 2,219,000 |
| 15 | | | | | | |
| 16 | METHOD OF FINANCING | | | | | |
| 17 | Allocations | | 18,481,000 | 1,700,000 1/ | | |
| 18 | Unobligated Carryover from Prior Year | | | 27,500 | | |
| 19 | Total Funds Available for Obligation | | | 1,727,500 | | |
| 20 | APPROPRIATION REQUIRED | | | | 2,500,000 | 2,219,000 |
| 21 | | | | | | |
| 22 | 1/ Reflects reduction of $500,000 for Savings & Slippage. | | | | | |
| 23 | | | | | | |
| 24 | | | | | | |
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EFFECTIVE DATE JAN 1986

DIVISION OHIO RIVER

DISTRICT HUNTINGTON

REGION OHIO

BASIN MUSKINGUM

PROJECT MUSKINGUM RIVER LAKES, OHIO (REHABILITATION)

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE.

4 FEB 1986

APPROPRIATION TITLE: Construction, General-Locks and Dams (Major Rehabilitation - Navigation)

PROJECT: Montgomery Locks and Dam, Ohio River, Pennsylvania (Major Rehabilitation) (Continuing)

LOCATION: Montgomery Locks and Dam are located on the Ohio River 31.7 miles below the confluence of the Allegheny and Monongahela Rivers which form the Ohio River at Pittsburgh, PA. The project consists of twin locks, a gated dam, two fixed weirs and an abutment. The adjacent parallel locks are located along the left bank of the river.

AUTHORIZATION: 1909 River and Harbor Act

BENEFIT TO COST RATIO: The remaining benefit-remaining cost ratio is not applicable because monetary benefits have not been quantified.

| SUMMARIZED FINANCIAL DATA | | ACCUM. % of EST. FED. COST |
|---|---|---|
| Estimated Federal Cost | $33,200,000 | |
| Estimated Non-Federal Cost | 0 | |
| Total Estimated Project Cost | $33,200,000 | |
| Allocation to 30 Sep 1985 | $ 6,150,000 | |
| Conference Allowance for FY 1986 $8,000,000 | | |
| Allocation for FY 1986 | $ 8,000,000 | |
| Allocation to Date | $14,150,000 | 43 |
| Allocation Requested for FY 1987 | $ 8,300,000 | 68 |
| Scheduled Balance to Complete after FY 1987 | $10,750,000 | |
| Unscheduled Balance to Complete after FY 1987 | $ 0 | |

| STATUS (1 January 1986) | PERCENT COMPLETE | COMPLETION SCHEDULE |
|---|---|---|
| Lands and Damages | 100 | Nov 1985 |
| Rehabilitation of Dam | 8 | Mar 1989 |
| Rehabilitation of Locks | 20 | Mar 1989 |
| Entire Project | 21 | Mar 1989 |

PRESENT CONDITION: The existing project consists of a non-navigable dam 1,378.75 feet long made up of ten 116-foot broad-crested gate controlled weirs; a landward lock 110 feet by 600 feet; and riverward lock 56 feet by 360 feet, both with lifts of 17.5 feet. The locks and dam have been operated and maintained since 1936. The rehabilitation work involves structural repairs to and replacement of several components of the dam, restoration of walls and new gates for the old lock, and replacement of mechanical and electrical equipment associated with operation of the dam and locks.

JUSTIFICATION: Montgomery Locks and Dam are part of an integrated system of locks and dams and channel maintenance which currently provides navigation throughout the total length of the Ohio River, the total length of the Monongahela River and 72 miles of the Allegheny River. The authorizing act for the Montgomery facilities provided for the construction of dual locks which were designed to accommodate the traffic then anticipated. Commercial waterway traffic has undergone a considerable change with respect to increased volume and size of tows. The recommended work, while not increasing the capacity, would provide a safer and more efficient and economical facility until such time as a complete replacement of the locks and dam can be considered.

If the recommended rehabilitation is not accomplished, the locks would be forced to continue operation with only in-house maintenance and emergency repairs without any planned major repairs or rehabilitation which could only lead to the eventual cessation of traffic. The major disadvantage of deleting or postponing rehabilitation is the extended delays which would be caused by more frequent breakdowns which could be followed by a complete cessation of traffic. Such an occurrence would impose significant adverse impacts on the area's economy. The facility is situated in a highly industrialized area with many of the industrial plants relying heavily on water transportation for receiving raw materials and shipping finished products. Should the lift gates on the dam and/or lifting machinery fail, the resulting loss of pool would be catastrophic with the above mentioned industrial complex's dependence on waterway transportation. In addition, power plants and industrial and municipal water intakes which rely on relatively stable pools would be adversely affected. In this reach of the river there are 12 industrial intakes, 6 municipal intakes and one utility intake, in addition to one industrial intake in the backwater area of the pool on the Beaver River.

Waterborne commerce passing through Montgomery Locks:

| Year | Tonnage |
|---|---|
| 1981 | 22,280,359 |
| 1982 | 18,151,510 |
| 1983 | 15,970,585 |
| 1984 | 22,233,000 |
| 1985 (Projection) | 22,000,000 |

The commodities making up these totals include coal, petroleum products, aggregates, iron, steel, chemicals, and ores. A large percentage of the coal is downbound to industries below Montgomery. Most of these industries have limited storage capacity and, therefore, must receive coal shipments frequently.

JUSTIFICATION (cont):

FISCAL YEAR 1987: The requested amount will be applied as follows:

| | |
|---|---|
| Continue Rehabilitation of Dam | $ 2,800,000 |
| Continue Rehabilitation of Locks | 5,075,000 |
| Engineering and Design | 25,000 |
| Supervision and Administration | 400,000 |
| Total | $ 8,300,000 |

The funds requested are required to continue construction during the budget year.

NON-FEDERAL COSTS: None.

STATUS OF LOCAL COOPERATION: None required.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal Cost Estimate of $33,200,000 is an increase of $4,300,000 over the latest estimated ($28,900,000) presented to Congress. This increase includes an increase of $15,000 for initial estimate of Real Estate requirements; and an increase of $4,285,000 for post-contract award and other estimating adjustments consisting of award of contract for Rehabilitation of Dam ($3,000,000 and Locks ($1,690,000), and Installation of 56' Miter Gates ($20,000); estimated final costs of contracts for Upper Guard Wall Cells (+$60,000) and Fabrication of 110' Miter Gates (-$410,000) and estimated final costs of Installation of 110' Miter Gates by in-house hired labor (-$75,000).

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT:

a. EIS: A FEIS on the Ohio River Navigation Project was filed with EPA in February 1980. However, an EIA evaluating the environmental, social and economic impacts of the proposed rehabilitation work was completed in March 1984.

b. Section 404 Requirements: The provisions of Section 404 of the Clean Water Act have been met by a preliminary Section 404(b)(1) evaluation in December 1983, a public notice issued on 7 February 1984 and a final 404(b)(1) evaluation signed by the District Commander on 14 March 1984. The Commonwealth of Pennsylvania waived water quality certification.

OTHER INFORMATION: Funds to initiate the rehabilitation were allocated in FY 83.

## HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

**Division:** Ohio River Division

**District:** Pittsburgh

**Project:** Montgomery Locks and Dam, Ohio River, PA
(Major Rehabilitation)

| | Estimates Presented to Congress ($1,000) | | | | |
|---|---|---|---|---|---|
| | Original Baseline | Cumulative Changes | Last | Incremental Change | Current |
| Federal Cost (Price Level) | $22,100 1/ | | $28,900 1/ | | $33,200 |
| Reason for Change: | | ($6,800) | | ($4,300) | |
| a. Price Escalation | | -$640 | | 0 | |
| b. Design Changes | | $9,010 | | 0 | |
| c. Additions (Functions Added Under General Authorization) | | 0 | | 0 | |
| d. Authorized Modification | | 0 | | 0 | |
| e. Post-contract Award and Other Estimating Adjustments | | -$1,570 | | $4,285 | |
| f. Schedule Changes | | 0 | | 0 | |
| g. Sundry | | 0 | | 0 | |
| h. Real Estate | | 0 | | 15 | |

1/ Includes an allowance for estimated inflation through the construction period.

REPORTS CONTROL SYMBOL:

| | |
|---|---|
| APPROPRIATION TITLE: CONSTRUCTION GENERAL<br>CONSTRUCTION GENERAL | CLASSIFICATION:<br>MAJOR REHABILITATION |

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19____ AND 19____

| LINE NO | ITEM (a) | PROJECT COST ESTIMATE (b) | TOTAL TO 30 SEP 19 85 (c) | CURRENT FY 19 86 (d) | BUDGET FY 19 87 (e) | BALANCE TO COMPLETE AFTER FY 19 87 (f) |
|---|---|---|---|---|---|---|
| 1 | Lands and Damages | 15,000 | 10,000 | 5,000 | | |
| 2 | Dam - Rehabilitation of Dam | 9,930,000 | 325,000 | 1,525,000 | 2,800,000 | 5,280,000 |
| 3 | Locks - Rehabilitation of Locks | 19,905,000 | 3,181,000 | 6,454,000 | 5,075,000 | 5,195,000 |
| 4 | Engineering and Design | 1,750,000 | 1,534,000 | 166,000 | 25,000 | 25,000 |
| 5 | Supervision and Administration | 1,600,000 | 485,000 | 465,000 | 400,000 | 250,000 |
| 6 | Total Applied Cost (Federal Funds Only) | 33,200,000 | 5,535,000 | 8,615,000 | 8,300,000 | 10,750,000 |
| 7 | Undistributed Costs (None) | | | | | |
| 8 | Total Project Cost (Federal Funds Only) | 33,200,000 | 5,535,000 | 8,615,000 | 8,300,000 | 10,750,000 |
| 9 | Pending Adjustments (None) | | | | | |
| 10 | Total Cost (Federal Funds Only) | 33,200,000 | 5,535,000 | 8,615,000 | 8,300,000 | 10,750,000 |
| 11 | Undelivered Orders | | 370,000 | -370,000 | | |
| 12 | Total Obligations | | 5,905,000 | 8,245,000 | 8,300,000 | 10,750,000 |
| 13 | | | | | | |
| 14 | Method of Financing | | | | | |
| 15 | Allocations | | 6,150,000 | 8,000,000 | | |
| 16 | Unobligated Carryover from Prior Year | | | 245,000 | | |
| 17 | Total Funds Available for Obligation | | | 8,245,000 | | |
| 18 | Appropriations Required | | | | 8,300,000 | 10,750,000 |
| 19 | | | | | | |
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|---|---|---|---|
| EFFECTIVE DATE<br>2 Jan 86 | DIVISION Ohio River<br>DISTRICT Pittsburgh | REGION Ohio<br>BASIN Ohio Headwaters | PROJECT Montgomery Locks and Dam, Ohio River, PA |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986

APPROPRIATION TITLE. Construction, General - Dam Safety Assurance Project (Multiple Purpose)

PROJECT Barkley Dam and Lake Barkley, Kentucky and Tennessee

LOCATION: The Barkley Lock and Dam project is located on the Cumberland River, 30.6 river miles above its confluence with the Ohio River. It is situated in Livingston and Lyon Counties, Kentucky, near Grand Rivers, Kentucky, 25 miles east of Paducah, Kentucky, 160 river miles below Nashville, Tennessee. The reservoir extends 118 miles upstream to Cheatham Lock and Dam (located near Ashland City, Tennessee).

AUTHORIZATION: River and Harbor Act of 1954.

BENEFIT-COST RATIO: The benefit-cost ratio is not applicable because monetary benefits have not been quantified.

| SUMMARIZED FINANCIAL DATA | | Accumulated % of Est. Fed. Cost |
|---|---|---|
| Estimated Federal Cost (Corps of Engineers) | $16,200,000 | |
| Estimated Non-Federal Cost | 0 | |
| Total Estimated Project Costs | $16,200,000 | |
| Allocations to 30 September 1985 | 0 | |
| Conference Allowance for FY 1986 | 1,200,000 | |
| Allocation for FY 1986 | 1,200,000 | |
| Allocations to Date | 1,200,000 | 7 |
| Allocation Requested for FY 1987 | 3,000,000 | 26 |
| Scheduled Balance to Complete after FY 1987 | 12,000,000 | |
| Unscheduled Balance to Completed after FY 1987 | 0 | |

| STATUS: (1 January 1986) | PERCENT COMPLETE | COMPLETION DATE |
|---|---|---|
| Dam | 0 | Jan 89 |

PRESENT CONDITION: Barkley Dam includes a concrete gravity section and two earth embankments. The overflow section, whichis 804 feet long has 12 gated spillways. The maximum height of the dam is 109 feet above the streambed. The power house section is 430 feet long. The dimension's of Barkley Lock's chamber are 110 feet by 800 feet, with a normal lift height of 57 feet. The right embankment is an earth fill dam approximately 7,116 feet long, and has a maximum height of 45 feet. The left bank consists of railroad fill and a short earth fill embankment, 1,609 feet long, with random fill placed between the railroad fill and the earth fill. The foundation materials of Barkley can be divided into three general zones. The top 25 feet is made up of an alluvial lean clay. The second zone, between 25 and 50 feet in depth, is composed of interbedded silts, sands, and clays. The bottom zone is comprised of silts, sands, and gravels and extends from a depth of 50 feet to top of rock, or to a depth of about 100 feet.

JUSTIFICATION: Barkley Dam is located 70 miles from the epicenter of the New Madrid earthquakes of 1811-1812. Studies to date indicate that, in the event of the design earthquake, liquefaction of the dam's foundation would occur affecting the safety of the structure. The consequences and/or impacts of failure of Barkley Dam would be catastrophic, resulting in damages and costs that would total over 700 million dollars. Analyses indicate that failure of the dam would occur in the switchyard under earthquake conditions. Failure of Barkley Dam would result in loss of life and serious and catastrophic economic costs, impacts, and consequences. Secondary and tertiary impacts have not yet been determined but would increase these costs significantly.

FISCAL YEAR 1987:

| | |
|---|---|
| Engineering and Design | $ 200,000 |
| Supervision and Administration | 400,000 |
| Initiate Dam Construction, Remedial | 2,400,000 |
| Total | $3,000,000 |

The funds requested are required for construction during the budget year.

NON-FEDERAL: None.

STATUS OF LOCAL COOPERATION: None required.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $16,200,000 is a decrease of $1,200,000 from the latest estimate ($17,400,000) presented to Congress. The change is due to decreases of $1,200,000 for adjustments in the estimated inflation allowance through the construction period.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: An Environmental Assessment (EA) is scheduled to be filed with the Environmental Protection Agency in the 3rd quarter of FY 1986. The provisions of Section 404 of Clean Water Act do not apply, because the project improvements do not involve the placement of fill material or discharge of dredged material into the waters of the United States.

OTHER INFORMATION: None

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

DIVISION. Ohio
DISTRICT Nashville

PROJECT: Barkley Dam and Lake Barkley, Kentucky and Tennessee

| Item | Original Baseline (1) | Estimates Presented to Congress ($1,000)<br>Cumulative Changes (2) | Last (3) | Incremental Change (4) | Current (5) |
|---|---|---|---|---|---|
| Federal Cost | 15,700 |  | 17,400 1/ |  | 16,200 1/ |
| (Price Level) | (Oct 84) |  |  |  |  |
| Reasons for Change: |  | (500,000) 1/ |  | (-1,200) 2/ |  |
| a. Price Escalations |  | 500,000 |  | -1,200 |  |
| b. Design Changes |  |  |  |  |  |
| c. Additional Function Added Under General Authorization |  |  |  |  |  |
| d. Authorization Modification |  |  |  |  |  |
| e. Post-Contract Award and Estimating Adjustments |  |  |  |  |  |
| f. Schedule Changes |  |  |  |  |  |
| g. Sundry |  |  |  |  |  |
| h. Real Estate |  |  |  |  |  |

1/ Includes an allowance for estimated inflation through the construction period.

2/ Includes $-1,200 for adjustments in the estimated inflation allowance through the construction period.

4 FEB 1986

REPORTS CONTROL SYMBOL: DAEN-CWB-13

| | |
|---|---|
| APPROPRIATION TITLE: CONSTRUCTION GENERAL | CLASSIFICATION: Dam Safety Assurance |

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM | PROJECT COST ESTIMATE | TOTAL TO 30 SEP 19 85 | CURRENT FY 19 86 | BUDGET FY 19 87 | BALANCE TO COMPLETE AFTER FY 19 87 |
|---|---|---|---|---|---|---|
| | (a) | (b) | (c) | (d) | (e) | (f) |
| 1 | DAM | $13,900,000 | 0 | 0 | $ 2,400,000 | $11,500,000 |
| 2 | ENGINEERING AND DESIGN | 1,300,000 | 0 | 1,000,000 | 200,000 | 100,000 |
| 3 | SUPERVISION AND ADMINISTRATION | 1,000,000 | 0 | 200,000 | 400,000 | 400,000 |
| 4 | TOTAL APPLIED COST (C of E Funds Only) | 16,200,000 | 0 | 1,200,000 | 3,000,000 | 12,000,000 |
| 5 | Undistributed Cost (None) | | | | | |
| 6 | CONSTRUCTION FACILITIES | 0 | | | | |
| 7 | TOTAL PROJECT COST (C of E Funds Only) | 16,200,000 | 0 | 1,200,000 | 3,000,000 | 12,000,000 |
| 8 | Pending Adjustments (None) | | | | | |
| 9 | TOTAL COST (C of E Funds Only) | 16,200,000 | 0 | 1,200,000 | 3,000,000 | 12,000,000 |
| 10 | Undelivered Orders | | | | | |
| 11 | TOTAL OBLIGATIONS | | 0 | 1,200,000 | 3,000,000 | 12,000,000 |
| 12 | | | | | | |
| 13 | METHOD OF FINANCING | | | | | |
| 14 | Allocations | | 0 | 1,200,000 | | |
| 15 | Unobligated Carryover from Prior Year | | | 0 | | |
| 16 | Total Funds Available for Obligation | | | 1,200,000 | | |
| 17 | Appropriations Required | | | | 3,000,000 | 12,000,000 |
| 18 | | | | | | |
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|---|---|---|---|
| EFFECTIVE DATE 1 Jan 86 | DIVISION OHIO<br>DISTRICT NASHVILLE | REGION OHIO<br>BASIN CUMBERLAND | PROJECT BARKLEY DAM AND LAKE BARKLEY KENTUCKY AND TENNESSEE |

ENG FORM 9 SEP 78 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986

## OHIO RIVER DIVISION
## JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

1. Navigation

a. Channels and Harbors.

The program request of $1,261,000 provides for the operational requirements of 3 projects. Requirements included: dredging, engineering and design, maintenance supervision and administration on spurs or side channels.

| Project | OBLIGATIONS<br>Actual<br>FY 1985 | Estimated<br>FY 1986 | Estimated<br>FY 1987 | Explanation of Major Changes |
|---|---|---|---|---|
| **KENTUCKY** | | | | |
| Big Sandy Harbor | $1,300,000 | $1,300,000 | $1,000,000 | FY 85 & 86: Additional dredging requirements. |
| Licking River | 12,000 | 8,000 | 11,000 | FY 85 & 87: Additional dredging requirements. |
| **WEST VIRGINIA** | | | | |
| Elk River Harbor | 250,000 | 250,000 | 250,000 | |
| TOTAL, Channels and Harbors | $1,562,000 | $1,558,000 | $1,261,000 | |

4 FEB 1986

## OHIO RIVER DIVISION
## JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

1. Navigation

b. Locks and Dams.

The program request of $76,229,000 provides for the operational requirements of 9 projects. Requirements include: operation and ordinary maintenance of project facilities; labor, supplies and parts for day-to-day functioning; periodic maintenance, repairs and replacements; and contract law enforcement.

| Project | OBLIGATIONS Actual FY 1985 | Estimated FY 1986 | Estimated FY 1987 | Explanation of Major Changes |
|---|---|---|---|---|
| KENTUCKY | | | | |
| Green and Barren Rivers | $2,055,000 | $1,278,000 | $1,015,000 | FY 85: Paving and construct office buildings Lock & Dam 1 & 2. Purchase piston rods.<br>FY 86: Paint upper miter gates. Repair gate at Lock 2. |
| Kentucky River | 1,417,000 | 1,655,000 | 843,000 | FY 85: Construct shop and office buildings. Repair gates at Lock & Dam 2, Lock and Dam 7.<br>FY 86: Repair gates, Lock and Dam 1, 3 & 4. |
| Ohio River Locks and Dams | 31,054,000 | 35,492,000 | 35,103,000 | FY 86: Paint tainter gates at Willow Island. Install gate hoist machinery at Captain Anthony Meldahl. Initiate Dashields major rehabilitation at $1,800,000.<br>FY 87: Continue Dashields major rehabilitation at $3,200,000: see justification following this table. |
| (Dashields L&D, PA--Major Rehab) | (0) | (1,800,000) | (3,200,000) | |
| Ohio River Open Channel Work | 3,729,000 | 4,630,000 | 4,657,000 | FY 86 & 87: Additional dredging requirements. |

## OHIO RIVER DIVISION
## JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

1. Navigation (cont'd)

b. Locks and Dams (cont'd)

| | OBLIGATIONS | | | |
|---|---|---|---|---|
| Project | Actual FY 1985 | Estimated FY 1986 | Estimated FY 1987 | Explanation of Major Changes |
| **PENNSYLVANIA** | | | | |
| Allegheny River | $4,005,000 | $5,202,000 | $5,252,000 | FY 86: Repair scour below Dam 7. Purchase miter gates at Lock 6.<br>FY 87: Complete repair at scour below Dam 7. Repairs at scour below Dams 2 & 4; valve repairs at Locks 7 & 8. Insulate operation buildings at Locks 6 & 7. |
| Monongahela River | 9,410,000 | 9,978,000 | 13,353,000 | FY 87: Complete abutment repair; Dam 8; dredge Maxwell pool; repair gates at Locks 3 & 4; repair scours below Dam 2 and Morgantown. |
| **TENNESSEE** | | | | |
| Tennessee River | 9,814,000 | 10,573,000 | 8,416,000 | FY 85: Repair Pickwick auxiliary lock; install stainless steel quoin and miter blocks at three locks.<br>FY 86: Continue repairs Pickwick auxiliary lock; unwater and repair Kentucky lock. |

## OHIO RIVER DIVISION
## JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

1. Navigation (Cont'd)

b. Locks and Dams (Cont'd)

| Project | OBLIGATIONS<br>Actual FY 1985 | Estimated FY 1986 | Estimated FY 1987 | Explanation of Major Changes |
|---|---|---|---|---|
| **WEST VIRGINIA** | | | | |
| Kanawha River | $6,023,000 | $6,350,000 | $6,735,000 | FY 87: Install miter gates at Winfield and Marmet. |
| Tygart Lake | 703,000 | 1,434,000 | 855,000 | FY 86: Repair concrete and replace gate valves.<br>FY 87: Replace water supply pipe. |
| TOTAL, Locks and Dams | $68,210,000 | $76,592,000 | $76,229,000 | |
| TOTAL--NAVIGATION | $69,772,000 | $78,150,000 | $77,490,000 | |

4 FEB 1986

## OHIO RIVER DIVISION
## JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

### 2. Flood Control

a. Reservoirs

The program request of $39,847,000 provides for the operational requirements of 69 flood control projects. Requirements include: operation and ordinary maintenance of project facilities; labor, supplies, materials, and parts for day-to-day functioning; periodic maintenance, repairs, and replacements; and contract law enforcement. The requested amount also includes application of special recreation use fees for recreation areas and recreation facilities at completed projects (Code 710).

| | OBLIGATIONS | | | |
|---|---|---|---|---|
| Project | Actual FY 1985 | Estimated FY 1986 | Estimated FY 1987 | Explanation of Major Changes |
| INDIANA | | | | |
| Brookville Lake | $410,000 | $402,000 | $366,000 | FY 85: Install piezometers. |
| Cagles Mill Lake | 507,000 | 385,000 | 321,000 | FY 85: Replace radio tower and paving.<br>FY 86: Shoreline reconnaissance study and boundary rectification. |
| Cecil M. Harden Lake | 313,000 | 449,000 | 365,000 | FY 86: Pave roads.<br>FY 87: Purchase control tower generator. |
| Huntington Lake | 368,000 | 454,000 | 398,000 | FY 86: Pave roads. |
| Mississinewa Lake | 422,000 | 413,000 | 377,000 | FY 85: Repair outlet channel; install fence. |
| Monroe Lake | 337,000 | 378,000 | 346,000 | FY 86: Pave roads. |
| Patoka Lake | 313,000 | 348,000 | 372,000 | FY 86 & 87: Increased water control management; purchase permanent operating equipment. |

## OHIO RIVER DIVISION
## JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

2. Flood Control (Cont'd)

a. Reservoirs (Cont'd)

| | OBLIGATIONS | | | |
|---|---|---|---|---|
| Project | Actual FY 1985 | Estimated FY 1986 | Estimated FY 1987 | Explanation of Major Changes |
| **INDIANA** (cont'd) | | | | |
| Salamonie Lake | $348,000 | $437,000 | $346,000 | FY 86: Install piezometers. |
| **KENTUCKY** | | | | |
| Barren River Lake | 1,268,000 | 1,073,000 | 1,140,000 | FY 85: Pave roads; construct shop building. |
| Buckhorn Lake | 642,000 | 746,000 | 660,000 | FY 86: Remove rock and debris; pave roads. |
| Carr Fork Lake | 806,000 | 732,000 | 786,000 | FY 85: Periodic inspection and boundary monumentation. |
| Cave Run Lake | 562,000 | 505,000 | 517,000 | FY 85: Boundary monumentation. |
| Dewey Lake | 1,237,000 | 870,000 | 737,000 | FY 85: Install downstream seepage control.<br>FY 86: Install relief wells. |
| Fishtrap Lake | 868,000 | 875,000 | 703,000 | FY 85 & 86: Repair stilling basin. |
| Grayson Lake | 698,000 | 700,000 | 535,000 | FY 85: Install piezometers.<br>FY 86: Install potable water supply system. |
| Green River Lake | 1,201,000 | 1,055,000 | 893,000 | FY 85 & 86: Pave roads and reroof buildings. |
| Martins Fork Lake | 541,000 | 454,000 | 486,000 | FY 85: Purchase sediment data collection equipment. |

## OHIO RIVER DIVISION
## JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

2. Flood Control (cont'd)

a. Reservoirs (cont'd)

| | OBLIGATIONS | | | |
|---|---|---|---|---|
| Project | Actual FY 1985 | Estimated FY 1986 | Estimated FY 1987 | Explanation of Major Changes |
| KENTUCKY (cont'd) | | | | |
| Nolin Lake | $1,321,000 | $1,323,000 | $2,322,000 | FY 87: Repair stilling basin. |
| Paintsville Lake | 566,000 | 550,000 | 456,000 | FY 85 & 86: Purchase permanent operating equipment. |
| Rough River Lake | 1,288,000 | 1,078,000 | 1,098,000 | FY 85: Pave roads. |
| Taylorsville Lake | 469,000 | 538,000 | 477,000 | FY 86: Periodic inspection and boundary monumentation. |
| OHIO | | | | |
| Alum Creek Lake | 694,000 | 630,000 | 511,000 | FY 85 & 86: Pave downstream ditches; repair stairways. |
| Berlin Lake | 1,449,000 | 2,040,000 | 864,000 | FY 85: Pave roads.<br>FY 86: Construct shop and office buildings. |
| Caesar Creek Lake | 587,000 | 707,000 | 556,000 | FY 86: Pave roads. |
| Clarence J. Brown Dam | 400,000 | 463,000 | 369,000 | FY 86: Periodic inspection. |
| Deer Creek Lake | 450,000 | 450,000 | 382,000 | FY 85 & 86: Pave roads and parking areas. |

## OHIO RIVER DIVISION
## JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

2. Flood Control (cont'd)

a. Reservoirs (cont'd)

| Project | OBLIGATIONS<br>Actual<br>FY 1985 | <br>Estimated<br>FY 1986 | <br>Estimated<br>FY 1987 | Explanation of Major Changes |
|---|---|---|---|---|
| OHIO (cont'd) | | | | |
| Delaware Lake | $332,000 | $550,000 | $337,000 | FY 86: Boundary monumentation. |
| Dillon Lake | 579,000 | 800,000 | 262,000 | FY 85 & 86: Boundary monumentation. |
| Michael J. Kirwan Dam & Reservoir | 684,000 | 536,000 | 491,000 | FY 85: Pave roads. |
| Mosquito Creek Lake | 551,000 | 803,000 | 723,000 | FY 86: Paint sluice gates; repair gantry crane and construct handicapped facilities.<br>FY 87: Repair concrete and update master plan. |
| Muskingum River Lakes<br>(Muskingum River Lakes, OH--Major Rehab) | 4,073,000<br>(0) | 4,200,000<br>(0) | 4,313,000<br>(840,000) | FY 87: Continue major rehabilitation--Bolivar and Pleasant Hill Dams at $840,000: see justification following this table. |
| North Branch of Kokosing River Lake | 105,000 | 115,000 | 153,000 | FY 87: Install piezometers. |

## OHIO RIVER DIVISION
## JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

2. Flood Control (cont'd)

a. Reservoirs (cont'd)

| Project | OBLIGATIONS<br>Actual<br>FY 1985 | <br>Estimated<br>FY 1986 | <br>Estimated<br>FY 1987 | Explanation of Major Changes |
|---|---|---|---|---|
| OHIO (cont'd) | | | | |
| Paint Creek Lake | $415,000 | $440,000 | $758,000 | FY 87: Install piezometers. |
| Tom Jenkins Dam | 269,000 | 425,000 | 242,000 | FY 85: Purchase permanent operating equipment.<br>FY 86: Boundary monumentation. |
| West Fork Mill Creek Lake | 287,000 | 338,000 | 258,000 | FY 85: Repair guardrails.<br>FY 86: Pave roads. |
| William H. Harsha Lake | 422,000 | 544,000 | 448,000 | FY 86: Purchase water control equipment. |
| PENNSYLVANIA | | | | |
| Conemaugh River Lake | 759,000 | 747,000 | 513,000 | FY 85: Paint bridge and crest gates; rehabilitate gantry crane electrical system.<br>FY 86: Paint gantry crane; drill, sample and test foundation. |
| Crooked Creek Lake | 1,694,000 | 2,552,000 | 1,175,000 | FY 85: Purchase and install prefabricated rest rooms.<br>FY 86: Construct restroom, shop and office facilities. |
| East Branch Clarion River Lake | 486,000 | 547,000 | 560,000 | FY 86: Repair boat launch ramp and renovate dwelling water system.<br>FY 87: Boundary survey and update water treatment plant. |

## OHIO RIVER DIVISION
## JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

2. Flood Control (cont'd)

a. Reservoirs (cont'd)

| | OBLIGATIONS | | | |
|---|---|---|---|---|
| Project | Actual FY 1985 | Estimated FY 1986 | Estimated FY 1987 | Explanation of Major Changes |
| PENNSYLVANIA (cont'd) | | | | |
| Kinzua Dam & Allegheny Reservoir | $1,068,000 | $938,000 | $763,000 | FY 85: Boundary survey, replace floor at visitor center and seal roads.<br>FY 86: Conduct sediment study. |
| Loyalhanna Lake | 960,000 | 1,013,000 | 729,000 | FY 85: Repair gantry electrical system.<br>FY 86: Pave roads and repair concrete. |
| Mahoning Creek Lake | 805,000 | 570,000 | 545,000 | FY 85: Pave roads. |
| Shenango River Lake | 2,181,000 | 2,034,000 | 1,370,000 | FY 85: Pave roads.<br>FY 86: Repair boat launch ramp and construct office building. |
| Tionesta Lake | 816,000 | 1,078,000 | 1,048,000 | FY 86: Remove tree and debris.<br>FY 87: Construct sanitary facilities. |
| Union City Lake | 478,000 | 696,000 | 514,000 | FY 86: Repair concrete. |
| Woodcock Creek Lake | 635,000 | 722,000 | 553,000 | FY 85: Repair tornado damage to dwellings and structures.<br>FY 86: Complete sanitary sewer tie-in. |

## OHIO RIVER DIVISION
## JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

2. Flood Control (cont'd)

a. Reservoirs (cont'd)

| | OBLIGATIONS | | | |
|---|---|---|---|---|
| Project | Actual FY 1985 | Estimated FY 1986 | Estimated FY 1987 | Explanation of Major Changes |
| **Pennsylvania** (cont'd) | | | | |
| Youghiogheny River Lake | $1,291,000 | $2,247,000 | $1,132,000 | FY 85: Purchase corrosion resistant steel plates. Pave and reconstruct roads.<br>FY 86: Pave roads and repair concrete. |
| **VIRGINIA** | | | | |
| John W. Flannagan Dam & Reservoir | 668,000 | 690,000 | 562,000 | FY 85: Replace water supply valves.<br>FY 86: Purchase permanent operating equipment. |
| North Fork of Pound River Lake | 253,000 | 275,000 | 467,000 | FY 87: Install piezometers. |
| **WEST VIRGINIA** | | | | |
| Beech Fork Lake | 557,000 | 560,000 | 558,000 | |
| Bluestone Lake | 1,056,000 | 550,000 | 677,000 | FY 85: Install seismic detection device, paint gantry crane and repair crest gate locking devices.<br>FY 87: Paint crest gate. |
| Burnsville Lake | 987,000 | 1,035,000 | 722,000 | FY 85: Replace permanent operating equipment.<br>FY 86: Clean and paint tainter gates. |

## OHIO RIVER DIVISION
## JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

2. Flood Control (cont'd)

a. Reservoirs (cont'd)

| | OBLIGATIONS | | | |
|---|---|---|---|---|
| Project | Actual FY 1985 | Estimated FY 1986 | Estimated FY 1987 | Explanation of Major Changes |
| WEST VIRGINIA (cont'd) | | | | |
| East Lynn Lake | $970,000 | $995,000 | $709,000 | FY 85 & 86: Purchase permanent operating equipment and construct storage building. |
| R. D. Bailey Lake | 1,037,000 | 1,200,000 | 884,000 | FY 85 & 86: Remove debris and clean retreat channel. |
| Summersville Lake | 995,000 | 1,120,000 | 905,000 | FY 86: Repair Howell-Bunger valve. |
| Sutton Lake | 1,523,000 | 1,291,000 | 1,093,000 | FY 85 & 86: Boundary monumentation and upgrade sanitary facilities. |
| TOTAL, Reservoirs | $45,001,000 | $47,666,000 | $39,847,000 | |

## OHIO RIVER DIVISION
## JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

2. Flood Control (cont'd)

b. Channel Improvements, Inspection and Miscellaneous Maintenance

The program request of $649,000 provides for the annual and periodic maintenance requirements of 7 local protection projects and the inspection of 140 completed works during the budget year.

| | OBLIGATIONS | | | |
|---|---|---|---|---|
| Project | Actual FY 1985 | Estimated FY 1986 | Estimated FY 1987 | Explanation of Major Changes |
| **KENTUCKY** | | | | |
| Middlesboro | $63,000 | $39,000 | $212,000 | FY 85: Purchase sediment data collection equipment.<br>FY 87: Dredge channel. |
| **OHIO** | | | | |
| Massillon | 18,000 | 15,000 | 15,000 | FY 85: Increased channel maintenance. |
| Newark | 17,000 | 15,000 | 15,000 | FY 85: Increased channel maintenance. |
| Roseville | 10,000 | 15,000 | 15,000 | FY 86 & 87: Increased channel maintenance. |
| **PENNSYLVANIA** | | | | |
| Johnstown | 1,000 | 7,000 | 7,000 | FY 86 & 87: Periodic inspection. |
| Punxsutawney | 11,000 | 7,000 | 7,000 | FY 85: Dredge channel. |

## OHIO RIVER DIVISION
## JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

2. Flood Control (cont'd)

b. Channel Improvements, Inspection and Miscellaneous Maintenance (cont'd)

| | OBLIGATIONS | | | |
|---|---|---|---|---|
| Project | Actual FY 1985 | Estimated FY 1986 | Estimated FY 1987 | Explanation of Major Changes |
| **WEST VIRGINIA** | | | | |
| Elkins | $10,000 | $6,000 | $21,000 | FY 85 & FY 87: Periodic inspections. |
| Inspection of Completed Works | 259,000 | 283,000 | 319,000 | FY 87: Additional project inspections. |
| Inspection of Non-Federal Levees | 28,000 | 30,000 | 38,000 | FY 87: Additional project inspections. |
| TOTAL, Channel Improvements, Inspection 7 Miscellaneous Maintenance | $417,000 | $417,000 | $649,000 | |
| TOTAL--FLOOD CONTROL | $45,418,000 | $48,083,000 | $40,496,000 | |

## OHIO RIVER DIVISION
## JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

### 3. Multiple Purpose Projects Including Power

The program request of $23,555,000 provides for the operational requirements of 9 multiple purpose projects. Requirements include: operation and ordinary maintenance of project facilities; labor, supplies, materials, and parts for day-to-day functioning; periodic maintenance, repairs, and replacements; and contract law enforcement. The requested amount also includes application of special recreation use fees for recreation areas and recreation facilities at completed projects (Code 710).

| Project | OBLIGATIONS<br>Actual FY 1985 | Estimated FY 1986 | Estimated FY 1987 | Explanation of Major Changes |
|---|---|---|---|---|
| KENTUCKY | | | | |
| Barkley Dam--Lake Barkley | $5,161,000 | $4,400,000 | $3,725,000 | FY 85: Seismic study; paint spillway gates and bulkheads; pave roads.<br>FY 86: Dredge miles 35-47; paint lock emergency dam and seismic study. |
| Laurel River Lake | 860,000 | 800,000 | 900,000 | FY 87: Purchase remote control communications equipment. |
| Wolf Creek Dam--Lake Cumberland | 5,295,000 | 2,900,000 | 3,132,000 | FY 85: Repair turbines and generator bearings; replace generator coolers and oil circuit breakers. |
| TENNESSEE | | | | |
| Center Hill Lake | 3,138,000 | 2,400,000 | 2,304,000 | FY 85: Boundary monumentation. |
| Cheatham Lock and Dam | 5,292,000 | 5,000,000 | 2,922,000 | FY 85 & 86: Dredge miles 200-216 at Riverfront Park. |

## OHIO RIVER DIVISION
## JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

3. Multiple Purpose Projects Including Power (cont'd)

| Project | OBLIGATIONS<br>Actual<br>FY 1985 | Estimated<br>FY 1986 | Estimated<br>FY 1987 | Explanation of Major Changes |
|---|---|---|---|---|
| **TENNESSEE** (cont'd) | | | | |
| Cordell Hull Dam and Reservoir | $3,349,000 | $2,900,000 | $2,564,000 | FY 85: Repair riprap and fisherman's walkway; construct restrooms.<br>FY 86: Replace spillway gates. |
| Dale Hollow Lake | 3,110,000 | 2,300,000 | 2,359,000 | FY 85: Replace oil circuit breakers, pave roads and construct rest rooms. |
| J. Percy Priest Dam & Reservoir | 2,556,000 | 2,300,000 | 1,845,000 | FY 85: Pave roads and construct rest rooms.<br>FY 86: Construct project office building. |
| Old Hickory Lock and Dam | 4,645,000 | 3,600,000 | 3,804,000 | FY 85: Construct service base buildings, pave roads and repair oil circuit breakers. |
| TOTAL--Multiple Purpose Projects | $33,406,000 | $26,600,000 | $23,555,000 | |

4. Protection of Navigation

The program request of $4,052,000 provides for accomplishing work essential to the administration and enforcement of specific laws enacted in the interest of protection of navigation.

| Project | Actual FY 1985 | Estimated FY 1986 | Estimated FY 1987 |
|---|---|---|---|
| General Regulatory Functions | 3,997,000 | 4,167,000 | 4,052,000 |
| TOTAL--Protection of Navigation | $3,997,000 | $4,167,000 | $4,052,000 |
| GRAND TOTAL--OHIO RIVER DIVISION | $152,593,000 | $157,000,000 | $145,593,000 |

APPROPRIATION TITLE: Operation and Maintenance, General - Major Rehabilitation (Flood Control)

PROJECT: Muskingum River Lakes, Ohio (Major Rehabilitation Continuing)

LOCATION: The Muskingum River Basin occupies 8,051 square miles in eastern Ohio with its headwaters originating approximately 30 miles south of Lake Erie. The Muskingum River flows into the Ohio River 172 miles below Pittsburgh, Pennsylvania.

AUTHORIZATION: Flood Control Act of 1938.

BENEFIT TO COST RATIO: The remaining benefit-remaining cost ratio is not applicable because monetary benefits have not been quantified.

| SUMMARIZED FINANCIAL DATA | | Accum. % of Est. Fed. Cost |
|---|---|---|
| Estimated Federal Cost | $18,300,000 | |
| Estimated Non-Federal Cost | 0 | |
| Total Estimated Project Cost | $18,300.000 | |
| Allocations to 30 September 1985 | 0 | |
| Allocation for FY 1986 | 0 | |
| Allocations to Date | $ 0 | 0 |
| Allocation Requested for FY 1987 | 840,000 | 5 |
| Scheduled Balance to Complete after FY 1987 | 17,460,000 | |
| Unscheduled Balance to Complete after FY 1987 | 0 | |

| STATUS (1 September 1986) | PERCENT COMPLETE | COMPLETION SCHEDULE |
|---|---|---|
| Atwood | 0 | Sep 1991 |
| Bolivar | 0 | Sep 1989 |
| Dover | 0 | Sep 1993 |
| Piedmont | 0 | Dec 1989 |
| Pleasant Hill | 0 | Sep 1991 |
| Entire Project | 0 | Sep 1993 |

PRESENT CONDITION:

Embankment stability problems and other deficiencies exist at all of the 14 original Muskingum River projects which were constructed prior to 1940. Corrective measures involve relief wells for the solution of underseepage problems abutment grouting for leakage, construction deficiency corrections and construction to assure embankment stability under the

DIVISION: OHIO RIVER DISTRICT: HUNTINGTON REGION OHIO
Muskingum River Lakes, Ohio (Rehabilitation)

PRESENT CONDITION (Cont'd): originally designed maximum pool conditions. A listing of rehabilitation work at each of the projects follows

Atwood Dam - Abutment grouting; toe drains.
Bolivar Dam - Dam stabilization
Dover Dam - Somerdale dikes & levees.
Piedmont Lake - Relief wells.
Pleasant Hill - Relief wells; dam stabilization.

JUSTIFICATION: The periodic inspection program conducted on all completed projects involves inspections for safety of embankments. Obvious underseepage problems have been encountered in the older Muskingum River Basin projects and flooding in July 1969 uncovered the existence of construction deficiencies at three locations. The quantity of uncontrolled seepage at substantially less than full pool conditions has generated alarm as to embankment stability under designed full pool conditions. The current program involves explorations and testing to determine the required corrective measures, followed by construction activities for stabilization of the pertinent dams, dikes and/or levees.

FISCAL YEAR 1987: The requested amount will be applied as follows:

| | | |
|---|---|---|
| Dam Stability work | | $300,000 |
| Engineering and Design | | 450,000 |
| Supervision and Administration | | 90,000 |
| | TOTAL | $840,000 |

The funds requested are required for construction during the budget year.

NON-FEDERAL COSTS: None.

STATUS OF LOCAL COOPERATION: Not applicable.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $18,300,000 is the initial estimate to be submitted to Congress.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The Final Environmental Impact Statement for the Muskingum River Basin projects was filed with CEQ on 5 July 1977. The FEIS notes deficiencies exist pursuant to present day design criteria and that studies are being conducted to evaluate remedial needs. The FEIS further states that as any subsequent corrective needs are identified they will be evaluated and if considered significant addressed by a supplement to the FEIS.

The provisions of Section 404 of the Clean Water Act do not apply because the project improvements do not involve the placement of fill material or the discharge of dredged material into the waters of the United States.

OTHER INFORMATION: Funds to initiate Major Rehabilitation were allocated in FY 1976. Some deficiency and underseepage problems were corrected with Operation and Maintenance (O&M) funds prior to FY 1976.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: Ohio River
District: Huntington

Project: Muskingum River Lakes, Ohio (Rehabilitation)

| | Estimate Presented to Congress ($1,000) | | | | |
|---|---|---|---|---|---|
| Item | Original Baseline | Cumulative Changes | Last | Incremental Change | Current |
| Federal Cost<br>(Price Level) | 18,300 | | No previous estimate presented to Congress | | 18,300 |
| Reasons for Change: | | (0) | | (0) | |
| a. Price Escalations | | | | | |
| b. Design Changes | | | | | |
| c. Additional Function Added Under General Authorization | | | | | |
| d. Authorized Modification | | | | | |
| e. Post-Contract Award and Other Estimating Adjustments | | | | | |
| f. Schedule Changes | | | | | |
| g. Sundry | | | | | |
| h. Real Estate | | | | | |

REPORTS CONTROL SYMBOL: DAEN-CWB-13

| | |
|---|---|
| APPROPRIATION TITLE: OPERATION & MAINTENANCE, GENERAL | CLASSIFICATION: MAJOR REHABILITATION |

## SUMMARY CONSTRUCTION PROGRAM (PB-1)
FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM (a) | PROJECT COST ESTIMATE (b) | TOTAL TO 30 SEP 19 85 (c) | CURRENT FY 19 86 (d) | BUDGET FY 19 87 (e) | BALANCE TO COMPLETE AFTER FY 19 87 (f) |
|---|---|---|---|---|---|---|
| 1 | RELIEF WELLS | 880,000 | | | | 880,000 |
| 2 | ABUTMENT GROUTING | 1,200,000 | | | | 1,200,000 |
| 3 | TOE DRAINS | 140,000 | | | | 140,000 |
| 4 | STABILIZE DAM | 10,445,000 | | | 300,000 | 10,145,000 |
| 5 | DIKES AND LEVEES | 2,500,000 | | | | 2,500,000 |
| 6 | ENGINEERING AND DESIGN | 1,715,000 | | | 450,000 | 1,265,000 |
| 7 | SUPERVISION AND ADMINISTRATION | 1,420,000 | | | 90,000 | 1,330,000 |
| 8 | | | | | | |
| 9 | TOTAL APPLIED COST (FED. ONLY) | 18,300,000 | | | 840,000 | 17,460,000 |
| 10 | Undistributed Cost | | | | | |
| 11 | TOTAL PROJECT COST (FED. ONLY) | 18,300,000 | | | 840,000 | 17,460,000 |
| 12 | Pending Adjustment | | | | | |
| 13 | TOTAL COST (FED. ONLY) | 18,300,000 | | | 840,000 | 17,460,000 |
| 14 | Undelivered Orders | | | | | |
| 15 | TOTAL OBLIGATIONS | | | | 840,000 | 17,460,000 |
| 16 | | | | | | |
| 17 | METHOD OF FINANCING | | | | | |
| 18 | Allocations | | | | | |
| 19 | Unobligated Carryover for Prior Year | | | | | |
| 20 | Total Funds Available for Obligation | | | | | |
| 21 | APPROPRIATION REQUIRED | | | | 840,000 | 17,460,000 |
| 22 | | | | | | |
| 23 | | | | | | |
| 24 | | | | | | |
| 25 | | | | | | |
| 26 | | | | | | |
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| | | | |
|---|---|---|---|
| EFFECTIVE DATE JAN 1986 | DIVISION OHIO RIVER<br>DISTRICT HUNTINGTON | REGION OHIO<br>BASIN MUSKINGUM | PROJECT MUSKINGUM RIVER LAKES, OHIO (REHABILITATION) |

ENG FORM 1 SEP 74 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986

**APPROPRIATION TITLE:** Operation and Maintenance General (Major Rehabilitation, Locks and Dams, Navigation)

**PROJECT:** Dashields Locks and Dam, Ohio River, Pennsylvania (Major Rehabilitation)

**LOCATION:** The Dashields Locks and Dam are located on the Ohio River 13.3 miles downstream from the confluence of the Allegheny and Monongahela Rivers which form the Ohio River at the point in Pittsburgh, PA. The project consists of twin locks and a fixed crest dam. The locks are located on the left bank of the river. The large lock chamber occupies the landward position and has clear dimensions of 110 x 600 feet. The adjacent smaller chamber is 56 x 360 feet. CONRAIL mainline railroad tracks are immediately adjacent to the dam abutment and the Pittsburgh and Lake Erie tracks run parallel to the river on the lock side.

**AUTHORIZATION:** The existing locks and dams constructed during the period 1927-1929 were authorized under the River and Harbor Act dated 3 March 1909.

**BENEFIT TO COST RATIO:** The remaining benefit-remaining cost ratio is not applicable because monetary benefits have not been quantified.

| SUMMARIZED FINANCIAL DATA | | ACCUM. % of EST. FED. COST |
|---|---|---|
| Estimated Federal Cost | $27,100,000 | |
| Estimated Non-Federal Cost | 0 | |
| Total Estimated Project Cost | $27,100,000 | |
| Allocations to 30 Sep 85 | $ 0 | |
| Conference Allowance for FY 1986 $1,800,000 | | |
| Allocations for FY 1986 | $ 1,800,000 | |
| Allocations to Date | $ 1,800,000 | 7 |
| Allocation Requested for FY 1987 | $ 3,200,000 | 18 |
| Scheduled Balance to Complete after FY 1987 | $22,100,000 | |
| Unscheduled Balance to Complete after FY 1987 | $ 0 | |

| STATUS (1 January 1986) | PERCENT COMPLETE | COMPLETION SCHEDULE |
|---|---|---|
| Rehabilitation of Dam | 0 | Dec 1989 |
| Rehabilitation of Locks | 0 | Dec 1989 |
| Entire Project | 0 | Dec 1989 |

Division: Ohio District: Pittsburgh, PA Region: Ohio

Dashields Locks and Dam, Ohio River, PA

4 FEB 1986

Mr. **Bevill**. The Chair recognizes Mr. Boner.

### MILL CREEK, NASHVILLE, TENNESSEE

Mr. **Boner**. Thank you, Mr. Chairman. I appreciate your allowing me to go ahead and ask these questions so I can catch a plane and hopefully get back to Nashville in time to meet some other commitments. First of all, I want to say to you that Colonel Kirkpatrick has done an outstanding job of working with us in Nashville. He has had some difficult tasks before him, and he has communicated with our office at every end. We have worked very closely with him, and he has done an excellent job. I saw him operate under pressure at a public meeting which we held in conjunction with the Council and out in the Mill Creek area. And I thought he did a very good job, and you have got some other folks up here from out of our Nashville area as well. I would like to ask you a few questions about the Mill Creek project, because that is the one that is obviously the most controversial in Nashville, and it is one that has been ongoing for a number of years. First of all, in this summary that I have, can I ask you just to bring me up to date exactly where we are in the process? I understand now that the report was sent to Cincinnati, the recommendations were made, and now we are in the public response process of the total evaluation.

General **Offringa**. That is correct, sir. We are currently conducting public meetings within the Nashville area to determine the extent of public concern and support for that project. Currently we are looking at a number of options, one of which may be to do this under the continuing authorities program in which the work would be done under our 205 authorities in conjunction with cost sharing with the City of Nashville.

Mr. **Boner**. Now, let me ask you this. When you were talking about the Mill Creek project, we were obviously talking about the two drybed dams, and I assume that this proposal supersedes the proposal, and if I am getting too specific, let me know. Concerning the Wimpole Drive area where you were going to buy up about 29 homes and I believe, include a plan to make a sanctuary for wildlife and environment. Has either of these been shelved or put aside, or are both to work together with each other?

General **Offringa**. If we complete the Mill Creek as planned, the two dry dams and the other associated work will preclude the requirement for the work at Wimpole Drive.

Mr. **Boner**. Now, what will the cost be if you complete the Mill Creek, as you say here, is it $11.4 million?

General **Offringa**. That is correct, sir.

### LOCAL COST SHARING

Mr. **Boner**. Now, is that Federal funds or is that total, and then what percentage of it would the local sponsor be required to pay?

General **Offringa**. Under the provisions of the proposed cost sharing envisioned in S. 1567, the Federal cost would be estimated at $6 million while the non-Federal cost would be $5.4 million. If we were to implement the project under Section 205, there would be a $4 million Federal ceiling, and the non-Federal share would be $7.4 million.

Mr. **Boner**. Now, what would determine whether or not you would do it under the 205 section as opposed to another way?

General **Offringa**. That determination would be made based upon our studies of the project, and also based upon the desires of the local community as it is basically a trade-off between how much costs they want to contribute and how quickly they need the project.

Mr. **Boner**. So that essentially what we are saying is if you do it under what you refer to as the 205, it would be a $4 million Federal cost cap, and then if it turns out to be a $11.4 million project, then it would be $7.4 for Metro?

General **Offringa**. That is correct.

Mr. **Boner**. Now, what would be the provision under the Senate Bill?

General **Offringa**. It would be $6 million Federal and $5.4 non-Federal. That is our estimate.

Mr. **Boner**. And what category of the law would that come under? Like you refer to one as Section 205, how do you refer to this one?

General **Offringa**. That would be under a specifically authorized project.

Mr. **Boner**. Now, if you went the specifically authorized project route, would that slow down the project in any way, or would either of these two expedite it more?

General **Offringa**. The specifically authorized project route would be a slower route than the 205.

Mr. **Boner**. In the report I see where it says the local sponsor, the Metropolitan Government of Nashville, and Davidson County supports the proposed plan. When you say that, tell me who you are referring to. Are you talking about the Mayor, because I do not think the Metro Council has actually voted on it yet?

General **Offringa**. I am informed that we have a letter of assurance which was signed by the Mayor on August 16, 1985.

Mr. **Boner**. Once the report is completed and you have your public hearing, then you will make a final recommendation on your proposal. That will then be presented to the Metropolitan Government as a sponsor. And as I understand it, then our Metro Council has to either vote to accept or to reject that proposal. And then, at that point in time, I assume when you say that it has the support of Metropolitan Government what you are meaning is that the Executive Office or the Mayor or someone has spoken and indicated by written letter that they support the project?

General **Offringa**. That is correct.

Mr. **Boner**. People are concerned whenever you have a project like this that would affect them personally. I think there is a great deal of merit to it, and I think that some of the people who have talked to me have some legitimate concerns, and as best I can tell, Colonel Kirkpatrick and his folks in Nashville are doing a real good job of trying to explain as much as they can. Sometimes when you have people who already have their minds made up, it is difficult to show them the facts because they want to see other alternatives. What impact would the public hearing have? What do you hope to gain that you do not already have in your interim proposal?

General OFFRINGA. What we would hope to gain is a further feel for the extent of public support for this project, and also an indication of the desires of the Metropolitan area to cost share in this project.

### REAL ESTATE ACQUISITION PROCESS

Mr. BONER. One of the other concerns that has been expressed to me by the residents who will be affected, and I am sure that this is not an exception but probably the rule, is that many of the people who live in the area where the dams will be placed are concerned about how you are going to value their property. Would you elaborate a little on that and tell me what the process is. Do you value the property on its base before this survey was made or do you value the property based upon what the market value is going to be in 1987, which would be obviously less because people feel like it is going to be taken away? How do you value that and what is the process and the recourse that the owners would have?

General OFFRINGA. We have a real estate process in which we go out and make appraisals at the time that we are going to acquire the land. That appraisal is based upon the current market value. Now, there are procedures for the landowner who does not agree with that appraisal to appeal through the courts and get a judicial reading on it.

Mr. BONER. When you say that there will be appraisals, at what point in time in this process are the appraisals made? Are they going to be made after the Metropolitan Government accepts this? Will they be based upon the appraisals before this project was started? The concern of many of the homeowners in the area is that every day that their property is in question, that the value has already dropped and continues to drop and, therefore, if you valued the property or appraised the property before this occurred, they would be at a higher value than if you tried to go out and assess the value of it once people realize it is going to be flood property because, obviously, land that is going to be underwater is not quite as valuable as land that can be used for other sources. So what is the time frame you use in trying to appraise the property?

General OFFRINGA. Our appraisals are made prior to construction so it would be the former case that dictates, sir.

Mr. BONER. And once again I am just trying to get clarification because these questions are asked of me and I want to be as definitive as possible. When you say prior to construction, are you saying that if we decide that we are going to go forward with the project in 1987 that it will be prior to 1987, or will it be prior to 1985 or prior to 1984? Can you give me a time frame that the appraisals will be based upon?

General OFFRINGA. If we were to go ahead with the project in 1987, as you indicated, then those appraisals would be made in that time frame, which would be just prior to the time that we would begin construction. Normally we procure the land at that time.

Mr. BONER. What is the time schedule for the Mill Creek project?

### STATUS OF MILL CREEK REPORT

General **OFFRINGA**. The interim report is scheduled for June 1986. That is the target date for the completion of our report.

Mr. **BONER**. All right. And then after that can you walk me through what other steps will have to take place and the time periods that will be involved there? The interim report is referred back to you?

General **OFFRINGA**. That is correct.

Mr. **BONER**. And then what do you do?

General **OFFRINGA**. The report would be forwarded with appropriate recommendations, for decision, and then we would come back and determine the appropriate construction schedule.

Mr. **BONER**. So when you say forwarded, you are saying then you would make your proposal, which would be June of 1986. After being finalized what do you do next?

General **OFFRINGA**. We forward that report to our headquarters here in Washington for their approval.

Mr. **BONER**. What would be the time frame on that?

General **OFFRINGA**. Normally, we would do about a 60-day review process at my headquarters.

Mr. **BONER**. So we are looking at August now?

General **OFFRINGA**. We are looking at August now.

Mr. **BONER**. All right. And then take me from there.

General **OFFRINGA**. Then the route would depend upon what the recommendation in the report was. If the recommendation in the report was to go with the 205, which right now, I understand, appears to be the choice of preference by the local authorities, then that project would have to compete with all other 205 projects for available funding. I understand that there is approximately $30 million included in the FY 1987 budget recommendation for the 205 projects.

Mr. **BONER**. At what point in time will the decision in Washington be made, one, I assume final by the Corps on which route to go, 205 or another alternative. Then is it at that point that you go back to Nashville and you say to the Council or to the government this is what we will do, and this will be your share and this is our share, and then the city would have to make a response either yes or no.

General **OFFRINGA**. That determination would have to be made prior to the forwarding of the report. So that would have to be made, I would approximate, somewhere in the June time frame.

Mr. **BONER**. Are you saying the local government has to make a commitment?

General **OFFRINGA**. They would have to make a commitment as part of the approval process.

Mr. **BONER**. In June then. Has that got to be a part of the interim report that you forward to Washington?

General **OFFRINGA**. Yes, sir.

Mr. **BONER**. I appreciate your letting me ask these questions. There are other projects that your folks are conducting some studies on, and I have been working very closely with them. And once again I appreciate the work the folks down in Nashville do. They have been more than cooperative at any time we have ever asked them to do anything. They have always been readily available to help. And I know if other divisions of the Nation had the response and the assistance that we receive from the Corps down in Nashville, you would be in excellent shape, not that you are not already. We appreciate the work that you do and appreciate this information.

General OFFRINGA. Thank you.

Mr. BONER. Thank you, Mr. Chairman.

Mr. BEVILL. Thank you very much. The Chair recognizes Mr. Myers.

### WABASH RIVER NAVIGATION

Mr. MYERS. Well, thank you, Mr. Chairman. General, pleased to have you here this morning. The Congressional district I have the honor of representing lies almost completely within the Ohio River Division, and a small corner of it goes over into the North Central Division. But through the years, 16 of them on this Committee, I have never had much to crow about. My discussion here has never been provincial or parochial, I am sorry to say. But I am pleased that this year I do have a little something to say. The Wabash River goes right down through the center of my district. I have a couple of hundred—well, not 200—I guess about 150 miles of it, approximately that, of the river. And we do have severe flooding, as you and I have discussed. We are all aware, and we saw some pictures here of a severe flooding problem. And the flood control measures in the upper reaches of the Wabash which were placed there a number of years ago do provide a tremendous amount of flood protection for all of us, particularly in the northern part of the district. Further south the effect of the upstream protection is somewhat dissipated, but it all depends where the rain falls, of course, as we also discussed. But we have constant floods out there as you are well aware and there is still a great need there. It has been difficult in recent years since I have been a member of this Committee, and the Chairman and I have been on it for about 16 years, it has been difficult for us to do much about it. But one of the things that people in that area are concerned about is navigation. I believe I am correct in making this statement, the Wabash River is the largest river in the United States that is not navigable today. And there are smaller rivers that are navigable and the other 10 that are larger than the Wabash which are all navigable. But, I am pleased that last year we did put a request in for a restudy of a navigation study which was conducted back in the seventies, which was shown to be inaccurate at the time for a number of reasons. And you and I have also discussed what you are doing about that, and I do appreciate what you are doing at this point to satisfy the requests that we received in this Committee from a number of people, Mayors, the Legislators from both Illinois and Indiana from two different sections, have requested a study, and county commissioners and business people have written this Committee asking for this to be done. I am a little concerned about how slow it will be moving. We want you to do a good job, but of the $200,000 that you are requesting for this study this year, for 1987, JUSTIFICATION: The Dashields Locks and Dam are part of an integrated system of locks and dams and channel maintenance which provides necessary navigation over the entire length of the Ohio and Monongahela Rivers, and 72 miles of the Allegheny River. Rehabilitation of the structure is necessary to insure safety and uninterrupted year-round operation of the project. The concrete of the land, middle, and river wall monoliths is in the advanced stage of deterioration. The vertical lock wall faces, which contain local sections of wall armour, are weathered and deteriorated and the concrete is gouged and spalled, particularly at the monolith joints. The top surfaces are likewise deteriorated and have several large random cracks. Serious structural cracks exist in the unreinforced valve monoliths, around the gate monoliths and in the pipe gallery ceilings. The lock miter gates are in poor condition and must be replaced with new gates. The gate pintles have been in place since their original installation. The lock gate operating machinery, gate anchorages, and filling and emptying systems have been adequately maintained, but will require rehabilitation for the lock to remain in service for a protracted period of time. The hydraulic and electrical systems are antiquated and will require replacement. The fixed crest dam has several areas of undercutting, which has washed away riverbed material and several feet of rock, placing the base of the dam on a rock ledge. Commercial waterway traffic has undergone considerable change with respect to increased volume and size of tows. The recommended measures, while not increasing the capacity, would provide a safer and more efficient and economical facility until such time as a complete replacement of the locks and dam can be reviewed, authorized and implemented.

If the recommended rehabilitation is not accomplished, the locks would be forced to continue operation with only in-house maintenance and emergency repairs. The most significant disadvantage of deleting or postponing rehabilitation is the extended delays which would be caused by more frequent breakdowns. In turn, this could lead to the complete cessation of traffic through Dashields. Such an occasion would impose significant adverse impacts on the area's economy, since the facility is situated in a highly industrial area with many of the industrial plants relying heavily on water transportation for the receiving of raw materials and the shipping of finished products. Should the fixed crest dam fail, the resulting loss of pool would be catastrophic to the industrial complexes which are dependent upon waterway transportation. In this section of the river there are thirteen (13) industrial complexes and five (5) municipal intakes dependent on the Dashields pool.

Waterborne Commerce Passing Through Dashields Locks:

| Year | Tonnage |
|---|---|
| 1981 | 20,939,727 |
| 1982 | 16,820,689 |
| 1983 | 14,521,592 |
| 1984 | 21,207,000 |
| 1985 (Projection) | 21,000,000 |

JUSTIFICATION (cont):

The commodities making up these totals include coal, petroleum products, aggregates, iron, steel, chemicals, ores, and a wide variety of miscellaneous commodities. A large percentage of the coal is downbound to industries below Dashields. Most of these industries have limited storage capacity and, therefore, must receive coal shipments frequently.

FISCAL YEAR 1987: The requested amount will be applied as follows:

| | |
|---|---|
| Initiate Rehabilitation of Dam | $ 400,000 |
| Complete Fabrication of 56 foot Chamber Lock Gates | $ 600,000 |
| Complete Installation of Upper and Lower Approach Mooring Cells | $ 720,000 |
| Initiate Rehabilitation of Locks | $1,030,000 |
| Engineering and Design | $ 200,000 |
| Supervision and Administration | $ 250,000 |
| TOTAL | $3,200,000 |

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $27,100,000 is an increase of $3,200,000 over the latest estimate ($23,900,000) presented to Congress. This change is due to an increase of $4,300,000 for post contract award and other estimating adjustments, and a decrease of $1,100,000 for adjustments in the estimated inflation allowance through the construction period.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: A FEIS on the Ohio River Navigation Project was filed with EPA in February 1980. An EIA evaluating the environmental, social and economic impacts of the proposed rehabilitation work was completed in the first quarter FY 1986. No significant adverse impacts or controversial environmental issues were identified.

The provisions of Section 404 of the Clean Water Act were met by a Section 404 (b)(1) Evaluation in the first quarter FY 1986, a Public Notice will be issued in the second quarter FY 1986, a certification from the Commonwealth of Pennsylvania in the third quarter FY 1986, and the District Commander's signature on the Feature Design Memorandum in the fourth quarter FY 1985.

OTHER INFORMATION: The proposed rehabilitation work consists of repair to deteriorated concrete and resurfacing the vertical faces and tops of the lock walls; repairing the filling and emptying valves; replacement of the hydraulic and electrical systems; replacing the 56 foot lock gates; replacing the gate operating machinery; furnishing and installing a new tow haulage unit; repairs to the abutment; providing scour protection downstream of the dam; and appurtenant items of work.

## HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: Ohio River
District: Pittsburgh

Project: Dashields Locks and Dam, PA

|  | Estimates Presented to Congress ($1,000) |  |  |  |  |
|---|---|---|---|---|---|
| Item | Original Baseline (1) | Cumulative Changes (2) | Last (3) | Incremental Change (4) | Current (5) |
| Federal Cost (Price Level) | $23,900 1/<br>(Oct 84) |  | $23,900 1/ |  | $27,100 1/ |
| Reason for Change |  |  |  |  |  |
| a. Price Escalation |  |  |  | $3,200<br>(-$1,100) |  |
| b. Design Changes |  |  |  |  |  |
| c. Additional Function Added Under General Authorization |  |  |  |  |  |
| d. Authorized Modification |  |  |  |  |  |
| e. Post Contract Award and Other Estimating Adjustments |  |  |  | ($4,300) |  |
| f. Schedule Changes |  |  |  |  |  |
| g. Sundry |  |  |  |  |  |
| h. Real Estate |  |  |  |  |  |

1/ Includes an allowance for estimated inflation through the construction period.

4 FEB 1986

REPORTS CONTROL SYMBOL:

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: MAJOR REHABILITATION

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19____ AND 19____

| LINE NO | ITEM (a) | PROJECT COST ESTIMATE (b) | TOTAL TO 30 SEP 19 85 (c) | CURRENT FY 19 86 (d) | BUDGET FY 19 87 (e) | BALANCE TO COMPLETE AFTER FY 19 87 (f) |
|---|---|---|---|---|---|---|
| 1 | Dam - Rehabilitation of Dam | 1,960,000 | | | 400,000 | 1,560,000 |
| 2 | Locks - Rehabilitation of Locks | 22,090,000 | | 550,000 | 2,350,000 | 19,190,000 |
| 3 | Engineering and Design | 1,500,000 | | 1,100,000 | 200,000 | 200,000 |
| 4 | Supervision and Administration | 1,550,000 | | 150,000 | 250,000 | 1,150,000 |
| 5 | Total Applied Cost (Federal Funds Only) | 27,100,000 | | 1,800,000 | 3,200,000 | 22,100,000 |
| 6 | Undistributed Costs (None) | | | | | |
| 7 | Total Project Cost (Federal Funds Only) | 27,100,000 | | 1,800,000 | 3,200,000 | 22,100,000 |
| 8 | Pending Adjustments (None) | | | | | |
| 9 | Total Cost (Federal Funds Only) | 27,100,000 | | 1,800,000 | 3,200,000 | 22,100,000 |
| 10 | Undelivered Orders | | | | | |
| 11 | Total Obligations | | | 1,800,000 | 3,200,000 | 22,100,000 |
| 12 | | | | | | |
| 13 | Method of Financing | | | | | |
| 14 | Allocations | | | 1,800,000 | | |
| 15 | Unobligated Carryover from Prior Year | | | | | |
| 16 | Total Funds Available for Obligation | | | 1,800,000 | | |
| 17 | Appropriations Required | | | | 3,200,000 | 22,100,000 |
| 18 | | | | | | |
| 19 | | | | | | |
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|---|---|---|---|
| EFFECTIVE DATE<br>2 Jan 86 | DIVISION OHIO RIVER<br>DISTRICT PITTSBURGH | REGION OHIO<br>BASIN OHIO HEADWATERS | PROJECT DASHIELDS LOCKS AND DAM, OHIO RIVER, PENNSYLVANIA |

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is that your maximum capability? Could you work any faster if we could find another few thousand dollars someplace?

General **Offringa**. For the FY 1987 budget, we have an additional capability of $150,000, which gives us a total capability of $350,000. Of course, this is subject to the usual qualifying language which I am obligated to interject here.

Although project and study capabilities reflect the readiness of the work for accomplishment, they are in competition for available funds and manpower Army-wide. In this context, the Fiscal Year 1987 capability amounts consider each project or study by itself without reference to the rest of the program. However, it is emphasized that the total amount proposed for the Army's Civil Works Program in the President's Budget for Fiscal Year 1987 is the appropriate amount consistent with the Administration's assessment of national priorities for Federal investments and the objectives of avoiding large budget deficits and the serious adverse effect that Government borrowing is having on the national economy. Therefore, while we could utilize additional funds on individual projects and studies, offsetting reductions would be required in order to maintain our overall budgetary objectives.

Mr. **Myers**. The Committee requested the study as far as Terre Haute, nothing about Mount Carmel. Could you explain why there is any consideration given here to a study limiting it to Mount Carmel and not on to Terre Haute? There are two studies, one to Mount Carmel and one to Terre Haute. How did you come up with the Mount Carmel study?

General **Offringa**. There really is only one study, sir. Under the reconnaissance study that we are doing, we have to look at all possible options. On the Wabash, two of the logical options for terminals would be at Mount Carmel and at Terre Haute. As part of the reconnaissance level study, it is our responsibility to look at those if for no other reason than to eliminate them as possible candidates.

Mr. **Myers**. Well, criticism of the 1977 report was that environmentally it was cutting across some farmland, avoiding some bad turns. I know the former Division Chief, who was a Colonel at the time, he and I were riding up and down there. I think the Chairman, too, in an airplane up the Tombigbee. And, my gosh, those hairpin turns there. And I asked him, I said how could you make these turns and could not make them on the Wabash? And he said, well, we have improved our technology both in navigation ability as well as ability to navigate the turns. So I hope that you, during this reconnaissance, can make a recommendation to avoid the environmental issues that came up before in that we were taking away some wetlands and we are taking away farmers' land that was not necessary. And I understand this is part of the reconnaissance that you will be doing to avoid these issues.

### WABASH ENVIRONMENTAL CONCERNS

General **Offringa**. Yes, sir. We are well aware of the environmental concerns, particularly with regard to the impact of massive straightening of the river. And, indeed, we do have better technologies. Also, what we are looking at in the study this time somewhat differs from what we looked at last time, and that is we are looking at sizing the study to Ohio River barges as opposed to Ohio River tows. And with the smaller tows, the need to remove some of those turns may be eliminated.

Mr. **Myers**. I noticed on one of your slides a very narrow river and you had a two barge wide tow going up a rather narrow river there, and the Wabash is a lot wider, at least as far north as where I live, which is halfway between Lafayette and Terre Haute, when flooded it is a lot wider than that. But at the present time it happens to be within its banks. The other objections that came about from the last study that came out of the Louisville office was that it really was not a new study, at that particular time there was no reconnaissance done actually as far as economics are concerned. They just put together what had been done in the past in several studies and tried to come up with an update without ever going out in the field and contacting actual users of the river and those that might use it. And I am pleased that you have already shown us a list of some people that you are beginning to contact. And if it should terminate in Terre Haute, there would be people above Terre Haute and out in each direction would fan into that as a terminus there. And you are considering that too. I believe that is what you told me.

General **Offringa**. That is correct.

Mr. **Myers**. And you will go beyond that because that is a criticism that we are still hearing. I hear business people, elevator operators, I sure never have been contacted by anybody, the Corps or anyone else, if I would be using the river for transportation. So I am pleased that you are doing that at this time. Because that was a criticism, one of the big reasons why it was not economically feasible back at that time.

### GALLIPOLIS LOCKS AND DAM

Another question that I have is on Gallipolis. Excuse me for being so provincial here, but I will move out of Indiana now. You showed again a view of Gallipolis and also said you were buying land now. Can you go beyond buying land without the passage of the bill presently in the Senate for authorization?

General **Offringa**. No, sir, we cannot until after May 15, 1986.

Mr. **Myers**. Nothing you can do beyond what you are doing right now?

General **Offringa**. That is correct, sir.

Mr. **Myers**. No way of speeding that up?

General **Offringa**. No, sir.

Mr. **Myers**. Everyone concerned on this Committee has visited Gallipolis, among other locks, and also Lock and Dam 26 on the Mississippi which is out of your area, but those are two critical choke points among others, but one of the most critical ones. So you are doing everything you can do right now on Gallipolis?

General **Offringa**. We are moving as rapidly as we can, sir.

### OHIO RIVER BETWEEN RIVER MILES 40 AND 491

Mr. **Myers**. Also in Ohio, a group of Congressmen, Congressman Applegate, Luken, McEwen and Miller, from Ohio, are all concerned about the Ohio Riverfront Comprehensive Study which was added in FY 1986 and now the lack of any attention. What do you have planned for that Ohio River Comprehensive Study?

General **Offringa**. We have not initiated the study and we have no funds budgeted for that in FY 1987 on the basis that it does not appear very likely, based upon available information, these studies would result in a favorable recommendation.

Mr. **Myers**. It kind of sounds like something I have been through on the Wabash. Someone sitting behind a desk some place decides it is not a good one so we will not spend a whole lot of time on it. Without having the study, how do you know it is not going to be feasible? That was the purpose of the study, the reason we put the money in. How do you come to that conclusion?

General **Offringa**. Well, as you know, sir, the money that we have to do these studies is limited. We attempt to come up with the most efficient schedule and assign the most projects that we think are going to come up with the best results. And based upon our overall analysis of all of the demands that we have for various studies and comparing what we anticipated to be the outcomes, there were others that appeared to be of better productivity in terms of a recommended Corps project than this one.

Mr. **Myers**. But you would have the capability, if Congress would put money in for it, I take it, without depriving some other project?

General **Offringa**. We have no capability to do that study on the basis that Federal accomplishment is not in accord with the Administration's policies.

Mr. **Myers**. At this time?

General **Offringa**. At this time, that is correct.

### WABASH NAVIGATION RECONNAISSANCE REPORT

Mr. **Myers**. Again back provincially on the Wabash study, the reconnaissance would be completed by 1987. I take it, with the extra funds you might cut it back from April a few months and do it a little quicker, could you?

General **Offringa**. April 1987 is the completion date of the reconnaissance study. We can go no quicker on that.

Mr. **Myers**. If we found extra dollars?

General **Offringa**. The dollars that I was referring to are 1987 dollars which would be applied to the feasibility portion of that study, assuming that we had a favorable reconnaissance result. And that would be the study that could be accelerated by the increasing of the capability.

Mr. **Myers**. Explain briefly what you plan to find from the reconnaissence and what the feasibility would do. Would you just very briefly explain what the two would do?

General **Offringa**. The reconnaisance determines the economics, it determines the benefit-cost ratios on a rough basis, and it would identify the most probable options to be followed and examined in detail in the feasibility study. And then the feasibility study would take those various options, and it would examine them in detail to determine which of those options would be the best one.

Mr. **Myers**. Well, thank you for what you are doing and your testimony this morning.

## GALLIPOLIS AUTHORIZATION

Mr. **Bevill**. General, the Committee, of course, is very interested in the Wabash and also Gallipolis project that this Committee has visited. We realize that it is a very critical project. One of the things that would speed up projects would be if H.R. 6 reaches the President and it is signed by the President. If that passes and provides increased funding in the form of fees which I oppose, but it is not my decision to make, if the Congress approves that with the fees, then those projects could likely be speeded up, could they not?

General **Offringa**. On the Gallipolis project, construction is dependent upon the passage of a bill. And that project then, if we were to have the bill, we would be able to progress beyond the land acquisition phase and move forward. The study that we are doing for Congressman Myers is not tied to the bill because we are still in the study phase on that, and it is a navigation study.

Mr. **Bevill**. We certainly understand that, but you do plan to expedite these projects as much as you can?

General **Offringa**. Yes, sir.

Mr. **Bevill**. I noticed that you did not mention the Yatesville project in your presentation. That was the late Carl Perkins main project. We are anxious to see that project through. Do you know what the status of that project is?

General **Offringa**. Yes, sir. As you know, we are doing that in two phases. Phase 1 is nearly completed and will be completed this fall. Phase 2, is the actual construction of the dam. We have received approval to go forward with that from the Assistant Secretary of the Army for Civil Works and we have just opened bids.

Mr. **Bevill**. Will you need any further money in 1987 to move that project on to completion?

General **Offringa**. The apparent low bid was higher than we expected. We are presently reviewing the options available to us, so I cannot provide a definite answer at this time.

Mr. **Bevill**. Thank you. I have questions on many other projects which I will submit to be answered for the record.

[The questions of Mr. Bevill follow:]

### STATION CAMP CREEK, KENTUCKY

Mr. **Bevill**. Briefly describe the Kentucky River and Tributaries, Kentucky, Station Creek Interim Study.

General **Offringa**. The study purposes for the Station Camp Creek Interim Study are flood control, water supply, hydropower, and recreation. The primary interest in this study is in determining the feasibility of a multipurpose impoundment on Station Camp Creek. Alternative sites and alternative sized multipurpose lakes will be the primary focus of the study. There is a particular public interest in the water supply and flood control aspects of such a project.

Mr. **Bevill**. You stated that cost sharing of the feasibility phase would be expected to incorporate several counties and communities in the region. Have local interests agreed to cost share on this study?

General **Offringa**. Local interests have not yet agreed to cost share this study. Upon completion of a favorable recommendation in the reconnaissance phase, locals interests would be required to cost share the feasibility phase of the study. It is expected that Estill County Fiscal Court will sponsor this project. Estill County officials understand the two-phase study process and the requirement to cost share the feasibility phase. They are willing to consider such cost sharing. Through the Bluegrass Area Development District, additional support and sponsorship is expected to be developed with adjacent counties and communities, including Fayette County and the City of Lexington.

### CUMBERLAND-TENNESSEE RIVERS

Mr. Bevill. In connection with the Cumberland-Tennessee Rivers study you state that FY 1986 funds will be used to complete the Wolf Creek hydropower interim report. What impact will the sequestering of FY 1986 appropriated funds have on this and other studies in your Division?

General Offringa. In general, the Balanced Budget and Emergency Deficit Control Act of 1985, generally referred to as the Gramm-Rudman-Hollings Act that mandated sequesterations will not cause any major problems in our General Investigations program this fiscal year. It is anticipated that we will retain flexibility to internally manage our studies, projects, and other activities in such a way as to effect optimum scheduling and timely realization of productive outputs within the limitations imposed by Gramm-Rudman-Hollings. However, some stretchout of work schedules, and rescheduling of completion dates is anticipated this fiscal year.

### KANAWHA RIVER NAVIGATION STUDY, WEST VIRGINIA

Mr. Bevill. In connection with the Kanawha River Navigation study, WV, I note the cost has increased $1.4 million due to additional refinements. What impact will these additional requirements have on the start of engineering and design of the Winfield project as shown on page 48 under the Construction category?

General Offringa. We do not anticipate any impact on the start of our engineering and design efforts as a result of the need for additional design refinements and navigation system investigations. The Winfield interim draft feasibility report is nearly complete and will be circulated for public review this spring. We have developed an economically justified and engineeringly sound plan for providing an additional 110′ x 1200′ lock at Winfield with minimal impact to nearby industries. We have already begun preliminary development of model tests. We anticipate BERH approval of our feasibility report by the end of the year. We will move directly into engineering and design in Fiscal Year 1987.

### MIAMI RIVER, LITTLE MIAMI RIVER AND MILL CREEK BASIN

Mr. Bevill. I note that the cost of the Miami River, Little Miami River and Mill Creek Basin study has increased $85,000 to investigate reallocation of water-supply storage to hydropower at Caesar Creek Lake. What is the basis for the proposed reallocation?

General Offringa. Opportunities appear to exist at Caesar Creek Lake, Ohio to reallocate storage space presently allocated to the water supply purpose. The State of Ohio apparently has no identified near term need for the contracted water supply storage space and is expected to be interested in opportunities to reallocate the storage space to meet other needs. Utilization of the water supply storage space for hydropower would enhance hydropower opportunities at Caesar Creek Lake as well as the opportunities for a combined system plan with William H. Harsha Lake.

### WOLF CREEK AND TUSCARAWAS RIVER, OHIO

Mr. Bevill. How was the implementation date of March 15, 1986, for cost sharing of the feasibility phase of the Wolf Creek and Tuscarawas River, Ohio, interim study determined?

General Offringa. The March 15, 1986 date is an error. Upon completion of a favorable recommendation in the reconnaissance phase, the implementation date will be established when locals agree to cost share the feasibility phase of the study. This reconnaissance phase, which includes the conditional cost sharing agreement is scheduled for completion in March 1986.

### WABASH RIVER BASIN NAVIGATION STUDY

Mr. Bevill. What is the status of the Wabash River Basin Comprehensive Navigation Interim study?

General Offringa. In Fiscal Year 1986, we initiated a reconnaissance study to evaluate improving the Wabash River for commercial navigation. The Wabash is the second largest tributary to the Ohio River, and over 40 counties in the states of Illinois and Indiana would benefit from navigation improvements. This region is rich in resources. Coal reserves approach 60 billion tons, and corn and soybean acreages total 16 and 13 million acres, respectively.

Investigations to be conducted include comprehensive commodity movement and rate studies to determine the level of traffic and the transportation savings that would accrue. Options to be investigated include various alignments, canal and lock sizes, and a termination point at either Mount Carmel or Terre Haute. Our reconnaissance study is scheduled for completion in Fiscal Year 1987.

### KANAWHA RIVER BASIN COMPREHENSIVE

Mr. **Bevill**. What specific items will be studied and reevaluated as a result of the flooding in the Kanawha River Basin?

General **Offringa**. The disastrous flood of November 1985 was the largest flood of record in many parts of the basin causing approximately $70,000,000 in damages and the loss of life. all study efforts completed to date will be reassessed in view of changes caused by this disastrous flood. Marlington is situated in the Greenbriar River Basin, an area which was subjected to record flooding for the entire length of the 150-mile stream. There is a need to incorporate data from this flood into project assessments and to incorporate the views of local people and officials to reflect changes that may be developed as a result of recent flooding. Additionally, several alternatives will be reevaluated such as multipurpose reservoirs in the Greenbrier/Marlington interim study. Both structural and nonstructural measures will be considered.

### LOCKS AND DAMS 52 AND 53, ILLINOIS AND KENTUCKY

Mr. **Bevill**. What is the General Design Conference referred to on page 17 in connection with the Locks and Dams 52 and 53, IL & KY study?

General **Offringa**. The General Design Conference is a coordination conference among the District, Division and the Office of the Chief of Engineers to discuss the framework directions, detailed design, and scheduling required for project implementation.

### GRAYVILLE, ILLINOIS

Mr. **Bevill**. Last year's Conference Report directed the Corps to investigate the problems caused by the shifting of the Wabash River at Grayville, IL. What have you done in response to the Committee directive?

General **Offringa**. In the Spring of 1985, Wabash River flooding created a channel cutoff near Grayville, which may isolate the city from the main river channel during low to normal flow periods. Potential adverse impacts include: degradation of water quality; loss of river access; bank erosion that may affect Interstate Highway 64, a county road, and a railroad; and lost agricultural, oil and gas productivity. A special project report is currently underway to identify a potential solution to the problem. The report will be completed in FY 1986. A preliminary assessment of the problem indicates that the most cost effective solution to this problem would be a flood flow weir located in the cutoff channel.

### INLAND WATERWAY PROJECTS

Mr. **Bevill**. Four of the seven inland waterway projects approved and funded for engineering and design and land acquisition in the FY 1985 Supplemental Appropriations Bill and proposed for funding in the FY 1987 budget are located in the Ohio River Division. The four are Locks and Dams 7 & 8 on the Monongahela River in WV and PA; Gallipolis Locks and Dam on the Ohio River in WV & OH; and Winfield Locks and Dam on the Kanawha River in West Virginia.

I have personally visited three of these projects and know how important they are to the Nation's economy.

Given the fact that all four projects have been authorized and funded, why do the justifications indicate that the budgeted funds won't be spent until legislation is enacted increasing the tax on fuel?

General **Offringa**. It is the Administration's position that construction will be initiated subsequent to enactment of the agreed upon increase in the inland waterways fuel tax. However, we are proceeding with engineering and design and land acquisition to assure that these projects are available for contruction as soon as it is feasible after the legislation is enacted.

Mr. **Bevill**. The budget is requesting funds for engineering and design only on three of these projects. At a minimum, why shouldn't engineering and design proceed in order that valuable time and money are not wasted awaiting passage of the legislation?

General **Offringa**. Sir, we are proceeding in the most expeditious and efficient manner in our planning, engineering, and design efforts on these projects.

Mr. **Bevill**. What will happen if legislation increasing the tax on fuel is not enacted?

General OFFRINGA. We are very optimistic that legislation will be enacted into law with no impact on project implementation. However, if the fuel tax legislation is not enacted, it is unlikely the Administration will allow us to proceed with construction.

### MILL CREEK, OHIO

Mr. BEVILL. In connection with the Mill Creek, Ohio project, explain the decreased cost of $1.9 million due to reversion to original channel alignment in the vicinity of National Distillers Products Co.

General OFFRINGA. During the early stages of the detailed design of this section of the project the property owners wanted the minimum amount of their property to be disturbed. In order to accommodate their desires we planned to build a vertical concrete wall along their property. However, during the detailed design process further negotiations with the property owners resulted in an agreement to revert back to the original plan contained in the authorizing document, that is, improve the channel past their property by going to rip-rapped side slopes. This action resulted in the decrease in construction costs.

### TURTLE CREEK, PENNSYLVANIA

Mr. BEVILL. The FY 1985 Supplemental Appropriations Bill directed the Corps to perform the needed channel work in connection with the Turtle Creek, PA, local protection project. What has the Corps done in response to the direction of Congress?

General OFFRINGA. Currently, $15,000 is available to the Pittsburgh District for preparation of a reconnaissance report which will define scope, cost, and time-frame for performing further detailed studies and the required remedial work. The report is scheduled to be completed in April 1986.

### SECTION 202 PROGRAM

Mr. BEVILL. The House Report accompanying the FY 1986 Energy and Water Development Appropriation Bill expressed concern relative to delays in construction of the Barbourville and Harlan, KY, portions of the Levisa/Tug Forks of the Big Sandy and Upper Cumberland Rivers project. The Report also directed that $1 million be allocated to the South Williamson, KY, portion of the project. What action have you taken in response to these directives?

General OFFRINGA. Construction of the Barbourville, KY, high-flow diversion channel is well ahead of schedule and should be completed next month. Engineering and design for the levee and wall modification to provide Standard Project Flood level of protection is scheduled for completion this December. The budget request contains $300,000 for completion of engineering and design for the levee wall. We expect to complete our report on the nonstructural component this spring. Implementation of the levee and wall modification has been administratively deferred to permit the limited federal dollars to be used to provide protection to other project areas where no protection now exists. The Harlan, KY, report was submitted to the Office of the Chief of Engineers for approval at the end of January 1986 and the South Williamson, KY, report is nearly complete. Upon approval of these reports we will be able to proceed with engineering and design, land acquisition, and construction. This of course is all subject to the availability of funds.

### MUSKINGUM RIVER LAKE, OHIO

Mr. BEVILL. Explain the sizeable cost decrease of $19.3 million for the Muskingum River Lake, Ohio project.

General OFFRINGA. This is the result of an administrative decision to fund the remaining rehabilitation of this work under Operation and Maintenance program instead of Construction, general, in FY 1987.

### SALYERSVILLE, KENTUCKY

Mr. BEVILL. What is the status of Salyersville, Ky., Section 205 small flood control project for which $300,000 was appropriated last year?

General OFFRINGA. All work has been terminated because the local sponsor is financially unable to meet the non-Federal requirements for participation.

## YATESVILLE LAKE, KENTUCKY

Mr. **Bevill**. What is the status of the Yatesville Lake, KY, project?

General **Offringa**. The $3 million contract for construction of the outlet tunnel and stilling basin at Yatesville Lake in Kentucky is essentially complete. A contract for construction of the remainder of the dam and outlet works is scheduled for award in March 1986.

## OPERATION AND MAINTENANCE

Mr. **Bevill**. I note a decrease in the FY 1987 budget of $15 million from FY 1986 for project operation and maintenance. Are all projects being properly maintained?

General **Offringa**. The budget amount of $145,593,000 will allow us to continue normal operation and maintenance of our projects. However, we will not be able to perform all of our major maintenance thereby creating a larger backlog of maintenance items.

## TIONESTA LAKE, PENNSYLVANIA

Mr. **Bevill**. I note that you plan to remove trees and debris from Tionesta Lake, PA, at a cost of $262,000. How often is work of this nature required?

General **Offringa**. This type of work is done only on an infrequent basis. It is required when excessive runoff into the lake causes dead trees and other debris to be washed into the lake. This type of material cannot be passed thru the outlet structure and must be removed by other means.

## BLUESTONE LAKE, WEST VIRGINIA

Mr. **Bevill**. The justifications on page 149 indicate an increase of $127,000 in FY 1987 compared with FY 1986 at Bluestone Lake, WV. Is the entire increase related to painting a crest gate?

General **Offringa**. Yes sir. The entire increase of $127,000 is required for painting six crest gates.

## MUSKINGUM RIVER LAKES, OHIO

Mr. **Bevill**. What is the relationship between the major rehabilitation work planned under operation and maintenance at the Muskingum River Lakes in Ohio and the work planned at the same project under Construction, General?

General **Offringa**. The rehabilitation work not under construction in fiscal year 1986 was transferred for funding from the Construction, General to the Operation and Maintenance, General, appropriation.

## DASHIELDS LOCKS AND DAM, PENNSYLVANIA

Mr. **Bevill**. Funds for major rehabilitation work at Dashields Locks and Dam, PA were provided last year and the cost has already increased $3.2 million. Do you anticipate similar increases between now and 1989, when the work is scheduled for completion?

General **Offringa**. No sir, we do not anticipate any further large increase in the cost. The current cost increase resulted from the more detailed engineering studies that lead up to preparation of plans and specifications.

## MORGAN COUNTY PORT, ALABAMA

Mr. **Bevill**. The conference report accompanying the FY 1986 Energy and Water Development Appropriation Act directed the Corps to expedite completion of the planning and the initiation of construction of the Morgan County Port in Decatur, Alabama. What is the status of the work?

General **Offringa**. The draft detailed project report is complete and currently under review by my office. The final report is scheduled for completion in June 1986. Construction could begin as early as the Spring of 1987 subject to approval by the Assistant Secretary of the Army and the availability of funds. The total construction cost is estimated at $5.0 million of which $1.8 million would be Federal.

THURSDAY, FEBRUARY 20, 1986.

## MISSOURI RIVER DIVISION

### WITNESSES

**BRIG. GEN. CHARLES E. DOMINY, DIVISION ENGINEER**
**JOHN VELEHRADSKY, CHIEF, PLANNING DIVISION**
**WILLIAM TODSEN, CHIEF, ENGINEERING DIVISION**
**ROBERT SCOTT, CHIEF, PROGRAM DEVELOPMENT**

Mr. BEVILL. General Dominy, you may proceed.

General DOMINY. Mr. Chairman, distinguished members of the Committee, I am privileged to report on the civil works activities of the Missouri River Division and to present the Division's FY '87 program request for your consideration.

Accompanying members of my staff are John Velehradsky, Chief of Planning; William Todsen, my Chief of Engineering; and Robert Scott, my Chief of Program Development.

The Missouri River Division civil works boundary encompasses all of Nebraska and parts of nine other States.

### FY 1987 PROGRAM REQUEST

The Missouri River Division program request for FY '87 is $100 million. This request is distributed 3 percent for investigations, 18 percent for construction, and 79 percent for operation and maintenance.

### GENERAL INVESTIGATIONS

The $2.8 million requested for general investigations will be applied to flood damage prevention studies. These funds are distributed 18 percent for two new starts, 48 percent for five continuing surveys, 11 percent for completion of two project review studies, and 23 percent for two continuation of planning and engineering studies.

### TURKEY CREEK BASIN, KANSAS

The FY '87 program includes funds for the reconnaissance phase of the study of the Turkey Creek Basin within Kansas City, Kansas. The basin is nearly 100 percent urbanized, with a significant amount of development existing in the flood plain.

### ST. JOSEPH, MISSOURI

The other reconnaissance phase study included in our program is for the City of St. Joseph, Missouri, located on the left bank of the Missouri River in northwest Missouri. Federally constructed Missouri River levees protect the city from Missouri River floods. However, a substantial flood hazard remains from several tributary streams which flow through or near the city.

### BLUE RIVER BASIN, KANSAS AND MISSOURI

The reconnaissance phase of our study on the Blue River Basin will be completed with funds available for the current year. The basin lies within the urbanized area of metropolitan Kansas City. A construction project on the lower end of the Blue River is underway. However, a serious flooding problem remains upstream. Funds for FY '87 will provide the Federal share of the follow-on feasibility study scheduled for completion in September 1988.

### OSAGE RIVER BASIN, MISSOURI, ABOVE HARRY S. TRUMAN DAM

The reconnaissance phase for the Osage River Basin above Harry S. Truman Dam was completed on 10 January 1985, with the execution of a cost-sharing contract for the feasibility phase. Funds requested for the Federal share in FY '87 will complete the study.

### PLATTE RIVER BASIN, NEBRASKA, WYOMING, AND COLORADO

The reconnaissance phase of our study of the Platte River, Nebraska, Wyoming and Colorado, is being pursued with funds allocated for the current year. Funds requested for FY '87 will provide the Federal share of the follow-on feasibility study requirements.

### REPUBLICAN RIVER, HARLAN COUNTY DAM TO MILFORD LAKE, NEBRASKA AND KANSAS

The reconnaissance phase of the Republican River study from Harlan County Dam in Nebraska to Milford Lake in Kansas was essentially completed in December of '85. Fiscal year '87 funds were to be used to continue the feasibility studies. However, subsequent to the preparation of our program request, the Board of Directors of the Lower Republican Natural Resource District, the potential sponsor, voted against cost-sharing of the feasibility study.

### MISSOURI RIVER, SOUTH DAKOTA, NEBRASKA, NORTH DAKOTA, AND MONTANA

The four-State Missouri River study covers a wide range of activities which include:

Flood problems in the vicinity of Pierre and Fort Pierre, South Dakota, and Bismarck, North Dakota;

Additional hydropower capacity at the Fort Peck Dam in Montana, Garrison Dam in North Dakota, and Gavins Point Dam in Nebraska and South Dakota;

Erosion control measures downstream from the main stem dams; and

Consideration of issues associated with water withdrawals from the main stem system.

Funds requested for FY '87 will be used to complete the study and to prepare the reporting documents.

### SALT CREEK AND TRIBUTARIES, NEBRASKA

The Salt Creek and Tributaries project, constructed in 1969, included levees, channel alterations and bridge alterations in the vicinity of Lincoln, Nebraska. Flood insurance studies in 1979 indicated that the project did not provide the designed level of protection. The results of the project review to date have indicated that to upgrade the entire system is not feasible. However, an opportunity may exist to upgrade segments of the levee systems in the high damage areas. Funds requested for FY '87 will complete the restudy.

### CANNONBALL RIVER, MOTT, NORTH DAKOTA

Another project review is the restudy of the Cannonball River Project in Mott, North Dakota, authorized by the Flood Control Act of 1958. The study will reevaluate the authorized levee plan and evaluate alternatives. Current year funds are being used to complete the reconnaissance phase at full Federal expense. The request for FY '87 will fund the Federal share of the feasibility phase which is scheduled for completion in September of 1987.

### WESTERN CREEK, COLORADO

Funds are requested for continuation of planning and engineering on the proposed Westerly Creek Project in Colorado. The Westerly Creek Basin lies almost entirely in the metropolitan Denver area. The proposed project consists of modification of the Kelly Road Dam, construction of Upper Lowry Dam, and construction of two drainage channels into the Upper Lowry Dam area. The requested funds will be used to complete planning and engineering studies and coordination with local sponsors. The General Design Memorandum is scheduled for completion in September of 1987.

### BRUSH CREEK, KANSAS CITY, MISSOURI

Funds are also requested for continuation of planning and engineering on the proposed Brush Creek Project at Kansas City, Missouri. The plan of improvement consists of deepening the channel an average of five feet, from downstream of Roanoke Road for approximately 7,500 feet to just below Troost Avenue. Kansas City, Missouri, the local sponsor, has proposed extending the project both upstream and downstream at their cost to further reduce flood damages in the Brush Creek Basin. Funds requested for FY '87 will be used to complete the General Design Memorandum.

### CONTINUING CONSTRUCTION

Focusing now on construction general, the $18 million we are requesting will be used to continue construction on eight projects.

### MISSOURI RIVER LEVEE SYSTEM, IOWA, NEBRASKA, KANSAS, AND MISSOURI

Construction of Missouri River Levee Units L611-614 and R616 downstream from Council Bluffs, Iowa, and Omaha, Nebraska, will be completed this year. Funds requested for FY '87 will be used to continue planning on four active units in Missouri. Flood damages prevented by the completed levee units through FY '85 total over $310 million.

### BLUE RIVER CHANNEL, KANSAS CITY, MISSOURI

Construction of the Blue River Channel Project in Kansas City, Missouri, experienced some difficulties in 1985. On the existing channel contract through a part of the highly industrialized area, severe slides of the channel bank occurred which required driving piling to stabilize those banks. Specific design changes of the remaining channel work in Stages 1 and 2 increased the cost estimate about $5 million. The required design effort in resolving the slides on the existing contract, combined with the complexity of design and the constricted construction area, requires a two-year delay in the completion of Stages 1 and 2. The requested funds will be used to continue channel construction and relocation of railroad facilities to clear the way for future construction contracts.

### MISSOURI NATIONAL RECREATIONAL RIVER, NEBRASKA AND SOUTH DAKOTA

The Missouri National Recreational River Project was authorized by Section 707 of the National Parks and Recreation Act of 1978. This project was funded for new start construction in the FY '85 Supplemental Appropriation Act. As you are aware, that Act also requires cost-sharing under terms and conditions acceptable to the Secretary of the Army. Negotiations with local interests to fulfill these requirements are underway. Funds requested for FY '87 will be used to initiate land acquisition and construction.

### CHATFIELD LAKE, COLORADO

The Chatfield Lake Project near Denver is complete except for downstream channel improvements. Stage 3 channel improvement and recreation development are scheduled for award in FY '86 and will be continued with FY '87 funds.

### LITTLE BLUE RIVER LAKES, MISSOURI

The Little Blue River Lakes Project consists of Longview and Blue Springs Dams. Longview Dam was physically completed in 1985. Unseasonably wet weather last summer slowed progress on the Blue Springs Dam embankment, causing a 12-month delay in closure and a three-month delay in overall project completion. The budget request will be used to continue construction of the Blue Springs Dam and recreation and other facilities at both lakes.

### LONG BRANCH LAKE, MISSOURI

The Long Branch Lake Project is complete except for cost-shared recreational development. Funds requested for FY '87 will be used to match funds to be contributed by the State of Missouri in FY '86.

### PAPILLION CREEK AND TRIBUTARIES, NEBRASKA

The active Papillion Creek and Tributaries Lakes Project in Nebraska consists of constructing four dams—Sites 11, 16, 18 and 20—and restudy of the remaining flood problems of the basin. Sites 11 and 16 are complete and fully operational.

At Site 20, the dam and relocations are complete. The requested funds will be used to complete seeding and planting of disturbed areas and to continue our cost-shared recreation.

The dam and relocations are also complete at Site 18, and the dam will perform its flood control function. The requested funds will be used to complete seeding and planting of disturbed areas and to initiate cost-shared recreation facilities at that location. As I reported last year, there is a potential pollution problem upstream of Site 18. To resolve this problem, local interests are developing a plan which would divert effluent from two sewage treatment facilities into an adjacent drainage basin. State and local interests are pursuing methods of financing the implementation of this plan. If local efforts are unsuccessful, a decision will be made during the first quarter of FY '87 whether to construct the recreation facilities under the contract and fill the pool or reformulate the project.

In the report on FY '82 appropriations, the Committee directed a restudy of the remaining flood problems in the Papillion Creek Basin. The restudy was completed in 1985. It was approved by the Board of Engineers for Rivers and Harbors on 30 October 1985. The restudy recommended a 50-year channel and Union Pacific Railroad Bridge improvement between West Center Road and L Street, with a recreation trail located within the right of way, and a basinwide flood warning system. It also recommended deauthorizing the remaining unconstructed dams of the original plan.

### HARRY S. TRUMAN DAM AND RESERVOIR, MISSOURI

The Harry S. Truman Lake Project in Missouri is 96 percent complete. The lake is now regulated to achieve its purposes of flood control, hydropower, recreation, and fish and wildlife. The downstream measures, consisting of a recreational harbor at Warsaw and levees on both sides of the Osage River are complete.

The original design of the powerhouse for this project provided only two sets of intake gates, which would be lowered through bulkhead slots in the roadway over the intake water passages. Installation of these gates would require several hours, depending on weather conditions. We have decided to install permanent intake gates and hoists on all units to reduce the risk of flooding the powerhouse in the event of unit runaway. This decision increased the project cost estimate by about $5 million and will extend the completion date 30 months.

Previous testimony concerning this project reported on our efforts to resolve the fish-kill problems associated with pump-back features of the hydroelectric power plant. In November '85, our Kansas City District completed an intensive three-year study to identify alternative methods for resolving the problem and they recommended future directions for hydropower operations at the project. As a result of that effort, we will continue operating with four units from the power pool with no pumpback. We will continue working toward five and six unit operation with careful evaluation of downstream impacts. The pumping feature will not be used until means become available to prevent losses to the Lake of the Ozarks fish population. We are continuing to monitor research and development efforts that may provide a solution to this fish loss problem. We will develop an interim cost allocation based on the current operation. This will provide a basis for an equitable plan for recovering the costs associated with the hydropower function.

Funds requested for FY '87 will be used to continue relocation of municipal facilities, construction of outlet channel erosion protection, and engineering and design. The funds will also permit us to initiate the program for new intake gates and hoists.

### OPERATION AND MAINTENANCE

Turning now to operation and maintenance, our program for FY '87 is $79.4 million. This compares with $77 million allocated for the current year.

Of the requested amount, $8.9 million, or 11 percent, will be used to maintain the 732-mile long Missouri River navigation and bank stabilization project; 24.2 million, or 31 percent, will provide for operation and maintenance of our flood control facilities; 42.9 million, or 54 percent, will be used for operation and maintenance of eight multi-purpose power projects; and the remaining 4 percent will be used for regulatory function activities.

Mr. Chairman, this completes my report, and I will be glad to entertain questions.

[The statement of General Charles E. Dominy follows:]

## STATUS REPORT ON CIVIL WORKS ACTIVITIES IN THE MISSOURI RIVER DIVISION

Mr. Chairman, distinguished members of the committee, I am Brigadier General Charles E. Dominy. I am privileged to report on the civil works activities of the Missouri River Division and to present the Division's FY 87 program request for your consideration.

Accompanying members of my staff are John Velehradsky, Chief of Planning; William Todsen, Chief of Engineering; and Robert Scott, Chief of Program Development.

The Missouri River Division civil works boundary encompasses all of Nebraska and parts of nine other states.

### RESERVOIR OPERATIONS

I am pleased to report today on the water resources in the Missouri River Basin. In addition to the 6 main stem and 41 tributary reservoirs constructed by the Corps of Engineers, my Division has responsibility during flood control operations for the regulation of 22 reservoirs constructed by the Bureau of Reclamation.

During 1985 we experienced the third lowest annual runoff amount in the upper Missouri River basin since the six massive main stem reservoirs reached normal operating levels in 1967. Inflow to the six main stem dams totaled only 16.2 million acre feet (MAF), 69 percent of normal. Water was released from storage as a result of the drought in order to continue support to the many basin residents. The main stem storage, almost 6 MAF below the desired level, is the third lowest since the projects reached desirable operating levels in 1967. Because of the relatively low runoff, only $2.3 million in flood damages were prevented by the six main stem reservoirs. Total damages prevented to date by the system are $2.0 billion. Damages prevented by the 41 tributary reservoirs in FY 85 totaled $14.5 million. The damages prevented by all 47 Corps-built reservoirs now totals $3.2 billion.

The below-normal 1985 runoff reduced main stem power generation to the lowest amount since 1977. Last year the six dams generated 9.5 million megawatt hours (MWh's) of energy, 14 percent less than average. This is contrasted with record setting generation from Stockton and Harry S. Truman projects, which produced 0.6 million MWh's of energy, 240 percent of normal.

Two and one-half million tons of commercial cargo were transported on the 732-mile Missouri River navigation channel during the 1985 season. This was down 14 percent from 1984 and 25 percent from the record 1979 season. The reduction is primarily due to the continuing depressed farm economy and lower exports. Because of the upper basin drought and below-normal storage in the main stems dams, a ten-day extension to the normal eight-month season was not planned in 1985. However, the navigation industry requested a ten-day extension in order to ship 1985's bountiful crop. Our evaluation did not identify any negative aspects to providing the additional flows for navigation, so we agreed to provide that service in exchange for a ten-day delay in the opening of the 1986 season, an effort on our part to provide "customer care." The navigation channel performed its job well with only 16 lost time incidents reported during 1985, up only slightly from the 14 reported in 1984. Like past years, dredging was not required.

Recreation attendance for 1985 at our reservoirs totaled 38.3 million visitor days, up over four percent from 1984. Pretty good for a basin that has a total population of less than nine million residents.

## FY 1987 PROGRAM REQUEST

The Missouri River Division program request for FY 87 is $100 million. This request is distributed as follows: 3 percent for investigations, 18 percent for construction, and 79 percent for operation and maintenance.

## GENERAL INVESTIGATIONS

The $2.8 million requested for General Investigations will be applied to flood damage prevention studies. These funds are distributed 18 percent for two new starts, 48 percent for five continuing surveys, 11 percent for completion of two project review studies, and 23 percent for two continuation of planning and engineering studies.

These study efforts are distributed throughout the basin. In the northern part of the basin is the Missouri River, South Dakota, Nebraska, North Dakota and Montana study. In North Dakota we have a restudy on the Cannonball River at Mott. Continuing south in the Missouri River basin, we have the Platte River, Nebraska, Wyoming and Colorado study. In addition, there is a restudy of the levees on Salt Creek at Lincoln, Nebraska and a study on the Republican River from Harlan County Dam, Nebraska to Milford Lake, Kansas. Coming back to the Missouri River, we have a new study at St. Joseph, Missouri; and further south and east is the study on the Osage River above Harry S. Truman Lake. Out west in the Denver, Colorado metropolitan area is the continuing planning and engineering study of Westerly Creek. In the Kansas City metropolitan area, in addition to three construction projects we have three studies:

Turkey Creek Basin, Kansas
Blue River Basin, Kansas and Missouri; and
Brush Creek, Kansas City, Missouri

## TURKEY CREEK BASIN, KANSAS

The FY 87 program includes funds for the reconnaissance phase of the study of the Turkey Creek Basin within Kansas City, Kansas. The basin is nearly 100 percent urbanized, with a significant amount of development existing in the flood plain. The area has been subjected to three damaging floods since 1977, generating a high level of concern by local interests. Possible solutions to the flood problem include channel and bridge modifications, levees, and nonstructural measures.

## ST. JOSEPH, MISSOURI AND VICINITY

The other reconnaissance phase study included in our program is for the city of St. Joseph, Missouri, located on the left bank of the Missouri River in northwest Missouri. Federally constructed Missouri River levees protect the city from Missouri River floods. However, a substantial flood hazard remains from several tributary streams which flow through or near the city. The most recent flooding occurred on 7 June 1984 and resulted in one death and severe monetary losses. Likely results of the study include Federal plans for detention dams, channel modifications, and levees on one or more of the tributary streams of the Missouri River in the study area.

## BLUE RIVER BASIN, KANSAS AND MISSOURI

The reconnaissance phase of our study on the Blue River Basin will be completed with funds available for the current year. The basin lies within the urbanized area of metropolitan Kansas City. A construction project on the lower end of the Blue River is underway; however, a serious flooding problem remains upstream. Funds for FY 87 will provide the Federal share of the follow-on feasibility study, scheduled for completion in September 1988. The likely outcome of the study is a recommendation of plans for channel modifications, detention structures, or other structural and nonstructural measures.

## OSAGE RIVER BASIN, MISSOURI
## ABOVE HARRY S. TRUMAN DAM

The reconnaissance phase for the Osage River Basin above Harry S. Truman Dam was completed on 10 January 1985 with the execution of a cost-sharing contract for the feasibility phase. Funds requested for the Federal share in FY 87 will complete the study. The most likely results are plans for flood control and water supply, probably tributary lakes.

The conference committee report on FY 86 appropriations directed the Corps of Engineers to study the feasibility of a potential crossing of the Lake of the Ozarks in the vicinity of Osage Beach, Missouri. This effort will be added to the study when a non-Federal sponsor agrees to fund the additional feasibility study.

## PLATTE RIVER BASIN
## NEBRASKA, WYOMING AND COLORADO

The reconnaissance phase of our study of the Platte River, Nebraska, Wyoming and Colorado is being pursued with funds allocated for the current year. Funds requested for FY 87 will provide the Federal share of follow-on feasibility study requirements. Pending completion of studies in the reconnaissance phase, it appears that the most likely sponsor for cost-sharing feasibility studies in FY 87 would be the Urban Drainage and Flood Control District No. 69, which has primary responsibility for flood control in the Denver metropolitan area.

## REPUBLICAN RIVER, HARLAN COUNTY DAM TO MILFORD LAKE, NEBRASKA AND KANSAS

The reconnaissance phase of the Republican River study from Harlan County Dam in Nebraska to Milford Lake in Kansas was essentially completed in December 1985. FY 87 funds were to be used to continue feasibility studies. However, subsequent to the preparation of the budget request the Board of Directors of the Lower Republican Natural Resource District (LRNRD), the potential sponsor, voted against cost-sharing of the feasibility study. The board elected not to sponsor the study because of several reasons, including: a) the marginal feasibility of the plans, b) the potential high cost, c) the LRNRD need to establish a benefit district for tax purposes without knowing who the ultimate beneficiaries might be, and d) the lack of feasibility of channel enlargement and tree clearing plans.

## MISSOURI RIVER, SOUTH DAKOTA, NEBRASKA, NORTH DAKOTA AND MONTANA

The four-state Missouri River study covers a wide range of activities, including:

Flood problems in the vicinity of Pierre and Ft. Pierre, South Dakota and Bismarck, North Dakota;

Additional hydropower capacity at Ft. Peck Dam, Montana; Garrison Dam, North Dakota; and Gavins Point Dam, Nebraska and South Dakota;

Erosion control measures downstream from the main stem dams; and

Consideration of issues associated with water withdrawals from the main stem system.

Funds requested for FY 87 will be used to complete the study and to prepare the reporting documents.

## SALT CREEK AND TRIBUTARIES, NEBRASKA

The Salt Creek and Tributaries project, constructed in 1969, included levees, channel alterations and bridge alterations in the vicinity of Lincoln, Nebraska. Flood insurance studies in 1979 indicated that the project did not provide the designed level of protection. The results of the project review to date have indicated that to upgrade the entire system is not feasible. However, an opportunity may exist to upgrade segments of the levee systems in high damage areas. Funds requested for FY 87 will complete the restudy.

## CANNONBALL RIVER, MOTT, NORTH DAKOTA

Another project review is the restudy of the Cannonball River project at Mott, North Dakota, authorized by the Flood Control Act of 1958. The study will reevaluate the authorized levee plan and evaluate alternatives. Current year funds are being used to complete the reconnaissance phase at full Federal expense. The request for FY 87 will fund the Federal share of the feasibility phase, which is scheduled to be completed in September 1987.

## WESTERLY CREEK, COLORADO

Funds are requested for continuation of planning and engineering on the proposed Westerly Creek project, Colorado. The Westerly Creek basin lies almost entirely in the metropolitan Denver area. The proposed project consists of modification of the Kelley Road Dam, construction of Upper Lowry Dam, and construction of two drainage channels into Upper Lowry Dam. The requested funds will be used to complete planning and engineering studies and coordination with local sponsors. The General Design Memorandum is scheduled for completion in September 1987.

## BRUSH CREEK, KANSAS CITY, MISSOURI

Funds are also requested for continuation of planning and engineering on the proposed Brush Creek project at Kansas City, Missouri. In September 1977 a disastrous flood struck the Brush Creek basin, causing the loss of twelve lives and over $66 million in economic losses. The plan of improvement consists of deepening the channel an average of 5 feet, from just downstream of Roanoke Road for approximately 7,500 feet downstream to just below Troost Avenue. Kansas City, Missouri, the local sponsor, has proposed extending the project both upstream and downstream at their cost (about $20 million) to further reduce flood damages in the Brush Creek basin. Funds requested for FY 87 will be used to complete the General Design Memorandum.

## KANSAS AND OSAGE RIVERS, KANSAS

Our study on the Kansas River and Osage River basins in Kansas is scheduled for completion in September 1986. This study identified opportunities for reallocating storage in existing Kansas and Osage River basin reservoirs. In December 1985, the Assistant Secretary of the Army for Civil Works and the Director, Kansas Water Office entered into an agreement concerning potential storage reallocation for water supply in existing reservoirs. Using available funds, we plan to prepare a report outlining the reallocation opportunities.

## CONTINUING CONSTRUCTION

On Construction General, the $18 million we are requesting will be used to continue construction on eight projects.

## MISSOURI RIVER LEVEE SYSTEM
## IOWA, NEBRASKA, KANSAS AND MISSOURI

Construction of Missouri River Levee Units L611-614 and R616 downstream from Council Bluffs, Iowa and Omaha, Nebraska, will be completed this year. Funds requested for FY 87 will be used to continue planning on four active units in Missouri: L385, L330-345, L319-325, and L15. Flood damages prevented by the completed levee units through FY 85 total $310 million.

## BLUE RIVER CHANNEL, KANSAS CITY, MISSOURI

Construction of the Blue River Channel project in Kansas City, Missouri experienced some difficulties in 1985. On the existing channel contract through a part of the highly industrialized area, severe slides of the channel bank occurred which required driving piling to stabilize the banks. Specific design changes of the remaining channel work in Stages 1 and 2 increased the cost estimate about $5 million. The required design effort in resolving the slides on the existing contract, combined with the complexity of design and constricted construction area, requires a two year delay in the completion of Stages 1 and 2. The requested funds will be used to continue channel construction and relocation of railroad facilities to clear the channel for future construction contracts.

## MISSOURI NATIONAL RECREATIONAL RIVER
## NEBRASKA AND SOUTH DAKOTA

The Missouri National Recreational River project was authorized by Section 707 of the National Parks and Recreation Act of 1978. This project was funded for new start construction in the FY 85 Supplemental Appropriation Act. As you are aware, that act also requires cost-sharing under terms and conditions acceptable to the Secretary of the Army. Negotiations with local interests to fulfill these requirements are underway. Funds requested for FY 87 will be used to initiate land acquisition and construction.

## CHATFIELD LAKE, COLORADO

Chatfield Lake project near Denver is complete except for downstream channel improvements. Those improvements consist of an excavated flood control channel and grade control structures, including a diversion weir for municipal water supply.

The first stage of the downstream channel and Union Avenue weir, which provides water supply for the city of Englewood, Colorado, are complete. Stage 2 construction is scheduled for completion in FY 86. Stage 3 channel improvement and recreation development are scheduled for award in FY 86. The scheduled completion date of the project is December 1987.

## LITTLE BLUE RIVER LAKES, MISSOURI

The Little Blue River Lakes project consists of Longview and Blue Springs dams. Longview dam was physically completed in 1985 and was operated for its flood control function. Unseasonably wet weather last summer slowed progress on the Blue Springs Dam embankment, causing a twelve-month delay in closure and a three-month delay in project completion. The budget request will be used to continue construction of the Blue Springs dam and recreation and other facilities at both lakes.

## LONG BRANCH LAKE, MISSOURI

The Long Branch Lake project is complete except for cost-shared recreational development. Funds requested for FY 87 will be used to match funds to be contributed by the State of Missouri in FY 86.

## PAPILLION CREEK AND TRIBUTARIES LAKES, NEBRASKA

The active Papillion Creek and Tributaries Lakes project in Nebraska consists of constructing four dams -- Sites 11, 16, 18, and 20 -- and restudy of the remaining flood problems of the basin. Sites 11 and 16 are complete and fully operational.

At Site 20 the dam and relocations are complete and the project is performing its flood control function. The requested funds will be used to complete seeding and planting of disturbed areas and to continue cost-shared recreation. In regard to recreation cost-sharing, the Papio Natural Resource District will be the sole sponsor under terms of the 1974 contract, which provides for repayment with interest over time.

The dam and relocations are also complete at Site 18, and the dam will perform its flood control function. The requested funds will be used to complete seeding and planting of disturbed areas and to initiate cost-shared recreation facilities. As I reported last year, there is a potential pollution problem upstream from Site 18. As a result, the City of Omaha requested that the Corps defer development of recreation facilities and not impound water until a solution is found. To resolve the potential water quality problem, local interests have developed a plan which would divert effluent from two sewage lagoons into an adjacent drainage basin. State and local interests are pursuing methods of financing the implementation of this plan. If local efforts are unsuccessful, a decision will be made during the first quarter of FY 87 whether to construct the facilities under the contract and fill the pool or to reformulate the project.

In the report on FY 82 appropriations, the committee directed a restudy of the remaining flood problems in the Papillion Creek Basin. The restudy was completed in 1985 and approved by the Board of Engineers for Rivers and Harbors on 30 October 1985. The restudy recommended a 50-year channel and Union Pacific Railroad Bridge improvement between West Center Road and L Street, with a recreation trail located within the right-of-way, and a basin-wide flood warning system. It also recommended deauthorizing the remaining unconstructed dams of the authorized plan.

## HARRY S. TRUMAN DAM, AND RESERVOIR, MISSOURI

The Harry S. Truman Lake project in Missouri is 96 percent complete. The lake is now regulated to achieve the purposes of flood control, hydropower, recreation, and fish and wildlife. The downstream measures, consisting of a recreational harbor at Warsaw and levees on both sides of the Osage River, are complete.

The original design of the powerhouse for this project provided only two sets of intake gates, which would be lowered through bulkhead slots in the roadway over the intake water passages. Installation of these gates would require several hours, depending on weather conditions. We have decided to install permanent intake gates and hoists on all units to reduce the risk of flooding the powerhouse in the event of unit runaway. This decision increased the cost estimate about $5 million and extended the completion date 30 months.

Previous testimony concerning this project reported on our efforts to resolve the fish-kill problems associated with pump-back features of the hydroelectric power plant. In November 1985 our Kansas City District completed an intensive three-year effort to identify alternative methods for resolving the problem and recommended future directions for hydropower operations at the project. As a result of that effort, we will continue operating with four units from the power pool with no pumpback. We will continue working toward five and six unit operation with careful evaluation of impacts. The pumping feature will not be used until means become available to prevent losses to the Lake of the Ozarks fish population. We are continuing to monitor research and development efforts that may provide a solution to fish losses during the pumpback operation. We will develop an interim cost allocation based on the current operation. This will provide a basis for an equitable plan for recovering the cost associated with the hydropower function.

Funds requested for FY 87 will be used to continue relocation of municipal facilities, construction of outlet channel erosion protection, and engineering and design. The funds will permit us to initiate the program for new intake gates and hoists.

## OPERATION AND MAINTENANCE

Our Operation and Maintenance program for FY 87 is $79.4 million. This compares with $77 million allocated for the current year.

Of the requested amount, $8.9 million, or 11 percent, will be used to maintain the 732 mile-long Missouri River Navigation and Bank Stabilization project; $24.2 million, or 31 percent, will provide for operation and maintenance of our flood control facilities; $42.9 million, or 54 percent, will be used for operation and maintenance of our eight multipurpose power projects; and $3.4 million, or 4 percent, will be used for regulatory activities.

Mr. Chairman, this completes my report.

## JUSTIFICATION

Mr. BEVILL. Thank you. We will insert the justification material for the Missouri River Division in the record at this point, without objection.

[The justifications follow:]

Justification of Estimates for Civil Functions Activities
Department of the Army, Corps of Engineers
Fiscal Year 1987
SUMMARY MISSOURI RIVER DIVISION

| | FY 1986 Allocations $ | FY 1987 Request $ | Increase or Decrease $ |
|---|---|---|---|
| General Investigations | | | |
| Surveys including Phase I Stage of AE&D | 2,470,000 | 2,178,000 | -292,000 |
| Continuation of Planning and Engineering | 735,000 | 665,000 | -70,000 |
| Advance Engineering and Design | 0 | 0 | 0 |
| Construction, General | | | |
| Continuation of Engineering and Design | 0 | 0 | 0 |
| Construction | 23,277,000 | 18,000,000 | -5,277,000 |
| Major Rehabilitation (Continuing) and Dam Safety Assurance | 0 | 0 | 0 |
| Operation and Maintenance, General | | | |
| Project Operations and Maintenance | 77,000,000 | 79,399,000 | +2,399,000 |
| Major Rehabilitation (Continuing) | 0 | 0 | 0 |
| TOTAL | 103,482,000 1/ | 100,242,000 | -3,240,000 |

1/ Does not reflect reduction required by the Balanced Budget and Emergency Deficit Control Act of 1985 (Public Law 99-177).

| Study | Total Estimated Federal Cost | Allocation Prior To FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional To Complete After FY 1987 |
|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ |

1. SURVEYS - NEW

a. Navigation Studies: None

b. Flood Damage Prevention Studies: The amount of $520,000 is requested for Fiscal Year 1987 to initiate and complete two flood damage prevention reconnaissance studies.

KANSAS

| Study | Total Estimated Federal Cost | Allocation Prior To FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional To Complete After FY 1987 |
|---|---|---|---|---|---|
| Turkey Creek Basin, Kansas | 310,000 | 0 | 0 | 310,000 | 0 |

The Turkey Creek basin is a 23 square-mile area within Kansas City, Kansas in Johnson and Wyandotte Counties. Turkey Creek flows into the Kansas River just three miles upstream from the confluence of the Kansas and Missouri Rivers. The basin is nearly 100 percent urbanized, and a significant amount of development exists in the flood plain. Large floods cause overbank flows to inundate highly developed areas along Southwest Boulevard and in the Central Industrial District in Kansas City, Missouri, as well as in Kansas City, Kansas. Events which have led to a determination that this study is necessary include the occurrence of three damaging floods since 1977 and a consequent high level of concern by local interests. The likely result of the study is a recommendation for a flood damage reduction plan for Turkey Creek in Kansas City, Kansas, and Kansas City, Missouri. Possible solutions to the flood problem include channel and bridge modifications, levees, and nonstructural measures.

| Study | Total Estimated Federal Cost | Allocation Prior To FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional To Complete After FY 1987 |
|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ |
| Turkey Creek Basin (Cont'd)<br>Kansas | | | | | |

The City Councils of Kansas City, Kansas, and Kansas City, Missouri, have recently passed resolutions in support of the study, which both cities are anxious to initiate. Both cities are aware of the requirement for cost-sharing the feasibility phase of study, and neither has expressed opposition.

The funds requested for Fiscal Year 1987 will be used to fully fund the reconnaissance phase at full Federal expense.

The reconnaissance phase is scheduled for completion in September 1987.

MISSOURI

| Study | Total Estimated Federal Cost | Allocation Prior To FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional To Complete After FY 1987 |
|---|---|---|---|---|---|
| St. Joseph, Missouri and Vicinity | 210,000 | 0 | 0 | 210,000 | 0 |

The city of St. Joseph, Missouri (1980 population - 76,691) lies predominantly on the left bank of the Missouri River in northwest Missouri. Portions of the city have been protected from Missouri River flooding by federally-built Missouri River levee units. However, a substantial flood hazard remains, particularly from several small tributary streams which flow through or near the city. These streams include Blacksnake Creek, Whitehead Creek, One Hundred and Two River, Charles Street Drainage, and Mitchell Avenue Drainage. The most recent flooding occurred on 7 June 1984 and resulted in one death and severe monetary losses. The city is interested in both structural plans and nonstructural measures for flood damage reduction. Likely results of the study include Federal plans for detention dams, channel modifications, and levees on one or more streams in the study area.

The City of St. Joseph expressed interest in this study by letter dated 20 July 1984 and subsequent informal contacts.

| Study | Total Estimated Federal Cost | Allocation Prior To FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional To Complete After FY 1987 |
|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ |

St. Joseph, Missouri and Vicinity (Cont'd)

The city has been informed of the requirement for cost sharing the feasibility phase of the study, and has not expressed opposition. The city council adopted a resolution on 3 June 1985 requesting that the study be undertaken.

The funds requested for Fiscal Year 1987 will be used to fully fund the reconnaissance phase at full Federal expense.

The reconnaissance phase is scheduled for completion in September 1987.

| Study | Total Estimated Federal Cost | Allocation Prior To FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional To Complete After FY 1987 |
|---|---|---|---|---|---|
| Total - Flood Damage Prevention Studies | 520,000 | 0 | 0 | 520,000 | 0 |

c. Shoreline Protection Studies: None

d. Special Studies: None

e. Comprehensive Studies: None

f. Project Review Studies: None

| Study | Total Estimated Federal Cost | Allocation Prior To FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional To Complete After FY 1987 |
|---|---|---|---|---|---|
| TOTAL SURVEYS - NEW | 520,000 | 0 | 0 | 520,000 | 0 |

2. SURVEYS - CONTINUING

a. Navigation Studies: None

| Study | Total Estimated Federal Cost | Allocation Prior To FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional To Complete After FY 1987 |
|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ |

b. Flood Damage Prevention Studies: The amount of $1,368,000 is requested for continuation of three studies and completion of two studies during Fiscal Year 1987.

KANSAS

| | | | | | |
|---|---|---|---|---|---|
| Blue River Basin, Kansas and Missouri | 585,000 | 0 | 250,000 | 200,000 | 135,000 |

The Blue River drains a 272 square-mile area, much of which is a highly urbanized part of the Kansas City Metropolitan Region. About 56 percent of the basin lies in Johnson County, Kansas; and the remainder is in Cass and Jackson Counties, Missouri. Flooding has been a major problem in the basin for many years. Public Law 91-611, Flood Control Act of 1970, authorized a plan of improvement which consisted of a 12-mile-long channel modification project on the lowermost part of the Blue River and four multiple-purpose lakes in the upper basin. The channel modification project is currently under construction. However, three of the four authorized lakes are in an inactive status; and it is highly unlikely that those three lakes will ever be built, due to development in project areas and lack of a recreation cost-sharing sponsor. The fourth lake, Mill Lake, is in a deferred status, and by itself would afford only a small degree of flood protection as it controls a drainage of only 9.5 square miles. In the absence of the authorized lakes, there remains a serious flood problem, particularly along the Blue River from 75th Street upstream to its Indian Creek tributary, and along much of Indian Creek.

Resolutions of support have been adopted by Kansas City, Missouri; Olathe, Leawood, Lenexa, Overland Park, and Johnson County, Kansas; and the Mid-America Regional Council. The Missouri Department of Natural Resources and the Kansas Water Office also have endorsed the study.

Fiscal Year 1986 funds are being used to fully fund the reconnaissance phase at full Federal expense. A wide range of structural plans and nonstructural measures for flood damage reduction will be considered. Likely potential solutions to the problem include channel modifications, levees, and nonstructural measures. The funds requested for Fiscal Year 1987 will be used to initiate the feasibility phase of study. Alternative flood damage reduction plans which were

| Study | Total Estimated Federal Cost | Allocation Prior To FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional To Complete After FY 1987 |
|---|---|---|---|---|---|
|  | $ | $ | $ | $ | $ |
| Blue River Basin, Kansas (Cont'd) and Missouri |  |  |  |  |  |

identified as favorable in the reconnaissance phase will be studied in greater detail.

The preliminary estimated cost of the feasibility phase is $670,000, which is to be shared on a 50-50 percent basis by Federal and non-Federal interests. A summary of study cost sharing is as follows:

| | |
|---|---|
| Total Estimated Study Cost | $920,000 |
| Reconnaissance Phase (Federal) | 250,000 |
| Feasibility Phase (Federal) | 335,000 |
| Feasibility Phase (non-Federal) | 335,000 |

The reconnaissance phase is scheduled for completion in September 1986. The feasibility study is scheduled for completion in September 1988.

MISSOURI

| | | | | | |
|---|---|---|---|---|---|
| Osage River Basin, Missouri, Above Harry S. Truman Dam | 1,370,000 | 670,000 | 125,000 | 275,000 | 0 |

The study area comprises about 40 percent of the 15,300 square-mile Osage River basin, including portions of the Kansas City and Springfield metropolitan areas. Floods and droughts have long been of major concern in this area. Local concern about flood problems has been expressed particularly along Big Creek and South Grand River. Water needs for municipal, industrial, energy, and irrigation uses are rapidly increasing, and now or soon will exceed existing supplies in some parts of the area. Ground water is highly mineralized and unsuitable for municipal use throughout

| Study | Total Estimated Federal Cost | Allocation Prior To FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional To Complete After FY 1987 |
|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ |

Osage River Basin, Missouri, (Cont'd)
Above Harry S. Truman Dam

much of the basin. Several towns and water districts are actively seeking new sources of water supply. The State of Missouri is highly concerned about the above-noted water resource problems in the area, and the Missouri Department of Natural Resources has given this area a high priority.

Fiscal Year 1986 funds are being used to continue the feasibility phase of the study. The non-Federal sponsor will provide one-half of remaining study costs when cost sharing is implemented on 15 March 1986. The feasibility phase will be expanded to include a study of the Lake of the Ozarks highway crossing if the State of Missouri agrees to pay all added costs, estimated at $50,000. The funds requested for Fiscal Year 1987 will be used to complete the feasibility phase of the study and to prepare a final report for submittal of recommendations to Congress.

The estimated cost of the feasibility phase is $1,470,000. The first year of the feasibility phase was funded at Federal expense pending implementation of cost sharing. A summary of study cost sharing is as follows:

| | |
|---|---|
| Total Estimated Study Cost | $1,870,000 |
| Reconnaissance Phase (Federal) | 400,000 |
| Feasibility Phase (Federal) | 970,000 |
| Feasibility Phase (Non-Federal) | 500,000 |

The reconnaissance phase was completed 10 January 1985. The feasibility phase is scheduled for completion in September 1987.

| Study | Total Estimated Federal Cost | Allocation Prior To FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional To Complete After FY 1987 |
|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ |
| **NEBRASKA** | | | | | |
| Platte River Basin, Nebraska, Wyoming, and Colorado | 559,000 | 0 | 200,000 | 140,000 | 219,000 |

The study area includes the South Platte River, North Platte River, and Platte River basins in Nebraska, Wyoming, and Colorado.

Clearly, the most severe water resource problem in the study area is in the South Platte River basin, where the rapidly urbanizing Metropolitan Denver and front range area is experiencing continually increasing flood control needs. The Metro Denver area is one of the fastest growing metropolitan areas in the country; and the rate of this urbanization, combined with the relatively steep topography, has created a huge backlog of flood control needs. The Urban Drainage and Flood Control District No. 69, which has the primary responsibility for flood control in the Metro area, has identified potential flood and erosion control improvements of about $68 million on the South Platte River and $467 million on tributary basins in the Metro Denver area. The three Corps of Engineers reservoirs in the South Platte River basin in the Denver area are very effective in reducing flood damages immediately downstream from the dams; however, the effectiveness diminishes downstream from Denver as tributary streams flow into the South Platte River.

The problems in the North Platte River basin are similar to those in the South Platte River basin. There are numerous dams and reservoirs in the North Platte River basin, including seven on the North Platte River, operated by the Bureau of Reclamation. Of these seven, only Glendo Dam has exclusive flood control storage. Existing reservoirs such as Lake McConaughy and those in the North Platte River basin may, through changes in operation and by providing replacement irrigation storage, provide opportunities for further flood damage reduction.

The Platte River basin experiences a wide range of problems, including widespread flooding, continuing bank erosion, deteriorating channel capacities, inadequate flows for irrigation and fish and wildlife during the summer periods, and inadequate water quality. In Nebraska, flooding and erosion is generally widespread; however, there are localized areas that experience more severe problems than others. Ice jams occasionally cause severe local flooding and can damage bridges or other improvements, create new channels, or deposit heavy sediment loads on flood plain agricultural lands. Ice jams impose particular hazards to the more urbanized areas because of the difficulty of predicting the frequency and location of the occurrence of ice jams.

| Study | Total Estimated Federal Cost | Allocation Prior To FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional To Complete After FY 1987 |
|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ |
| Platte River Basin, Nebraska, Wyoming, and Colorado (Cont'd) | | | | | |

Fiscal Year 1986 funds are being used to fully fund the reconnaissance phase at full Federal expense. The funds requested for Fiscal Year 1987 will be used to initiate the feasibility phase of the study. The preliminary estimated cost of the feasibility phase is $718,000, which is to be shared on a 50-50 percent basis by Federal and non-Federal interests. A summary of study cost sharing is as follows:

| | |
|---|---|
| Total Estimated Study Cost | $918,000 |
| Reconnaissance Phase (Federal) | 200,000 |
| Feasibility Phase (Federal) | 359,000 |
| Feasibility Phase (Non-Federal) | 359,000 |

The reconnaissance phase is scheduled for completion in November 1986. The feasibility study is scheduled for completion in September 1989.

| | | | | | |
|---|---|---|---|---|---|
| Republican River, Harlan County Dam to Milford Lake - Nebraska and Kansas | 540,000 | 200,000 | 130,000 | 135,000 | 75,000 |

The Republican River rises in eastern Colorado and flows through southern Nebraska and north-central Kansas to its junction with the Smoky Hill River to form the Kansas River. The basin is nearly 400 miles long and covers almost 25,000 square miles. Although a number of multiple-purpose Federal lakes have been constructed in the basin which provide flood control, Republican River flooding continues to be a problem because of a reduction in channel capacity. The problem is most severe in the reach from Harlan County Dam in Nebraska to Milford Lake in Kansas.

| Study | Total Estimated Federal Cost | Allocation Prior To FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional To Complete After FY 1987 |
|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ |
| Republican River, Harlan County, Dam to Milford Lake - Nebraska and Kansas | (Cont'd) | | | | |

Potential solutions include channel enlargement, removal of willow growth and other obstructions from the channel, levees, and tributary flood control structures. Local interests include affected landowners, the Lower Republican Natural Resources District, and the State of Nebraska. Interest has been expressed informally by the State of Kansas.

Fiscal Year 1986 funds are being used to complete the reconnaissance phase and to initiate the feasibility phase of the study. The feasibility phase will be initiated at Federal expense upon agreement by the local sponsor to share 50 percent of the costs of the feasibility phase after cost sharing is implemented. Alternative plans will be refined and evaluated in greater detail. The Soil Conservation Service is participating in the analysis of tributary structures. Funds requested for Fiscal Year 1987 will be used to continue the feasibility phase of the study. Evaluations of alternative plans will be continued in more detail.

The estimated cost of the feasibility phase is $620,000, which is to be shared on a 50-50 percent basis by Federal and non-Federal interests. A summary of study cost sharing is as follows:

| | |
|---|---|
| Total Estimated Study Cost | $850,000 |
| Reconnaissance Phase (Federal) | 230,000 |
| Feasibility Phase (Federal) | 310,000 |
| Feasibility Phase (Non-Federal) | 310,000 |

The reconnaissance phase is scheduled for completion in January 1986. The feasibility phase is scheduled for completion in September 1988.

| Study | Total Estimated Federal Cost | Allocation Prior To FY 1986 | Allocation FY 1986 | Tentative Allocaton FY 1987 | Additional To Complete After FY 1987 |
|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ |
| SOUTH DAKOTA | | | | | |
| Missouri River, South Dakota, Nebraska, North Dakota, and Montana | 7,743,000 | 6,477,000 | 648,000 | 618,000 | 0 |

This study area consists of the Missouri River reach between Sioux City, Iowa, and Three Forks, Montana. The area includes the six existing main stem dam and lake projects operated by the Corps of Engineers and the remaining open river segments. The overall investigation is concerned with a wide range of interrelated water resources problems and opportunities relating to the main stem system and its operation. These include opportunities for providing additional hydropower units at the existing main stem dams; other hydropower opportunities that may exist; problems associated with streambank erosion, waterlogging, streamflow depletions, and reservoir sediment accumulations; possible opportunities for modifying the method of operation of the main stem system to meet a wide range of issues and changing needs within the basin; opportunities for recreation, and fish and wildlife preservation or development; and flood control, navigation, and other water resource and related problems and opportunities. The present installed hydropower capacity of the existing main stem reservoir projects is 2,098 megawatts. Additional hydropower development on the Missouri River offers an opportunity to help meet peak power loads and to reduce the need to construct higher-cost coal-fueled generation facilities to meet peak demands. Because of regional power needs and strong public support, an interim report on the potential Gregory County hydroelectric pumped-storage facility was completed in June 1982.

Fiscal Year 1986 funds are being used to complete the assessment of additional hydropower opportunities at Gavins Point Dam, to continue addressing water issues in the basin, to continue studies necessary to resolve ice-jam flooding problems in the downstream areas of Pierre and Fort Pierre, and to continue bank stabilization studies at numerous sites along the main stem system. Water issues include consideration of municipal and industrial water withdrawals from the main stem system and the optimization of main stem dam operation under future depletion levels to assure maximum basinwide benefits.

The funds requested for Fiscal Year 1987 will be used to complete the study and to prepare and circulate the report and environmental impact statement.

| Study | Total Estimated Federal Cost | Allocation Prior To FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional To Complete After FY 1987 |
|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ |
| Missouri River, South Dakota, Nebraska, North Dakota, and Montana | (Cont'd) | | | | |

The current Federal cost estimate of $7,743,000 is an increase of $153,000 over the latest estimate of $7,590,000 submitted to Congress. This includes an increase of $100,000 for more detailed study of alternative plans for resolving flooding in the Pierre and Ft. Pierre, South Dakota area and $53,000 for price level increases.

The study report of the Division Engineer is scheduled for completion in October 1987.

| Study | Total Estimated Federal Cost | Allocation Prior To FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional To Complete After FY 1987 |
|---|---|---|---|---|---|
| Total - Flood Damage Prevention Studies | 10,797,000 | 7,347,000 | 1,653,000 | 1,368,000 | 429,000 |

c. Shoreline Protection Studies: None

d. Special Studies: None

e. Comprehensive Studies: None

f. Project Review Studies: The amount of $290,000 is requested for two project review studies during Fiscal Year 1987.

| Study | Total Estimated Federal Cost | Allocation Prior To FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional To Complete After FY 1987 |
|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ |
| **NEBRASKA** | | | | | |
| Salt Creek and Tributaries, Nebraska | 410,000 | 265,000 | 0 | 145,000 | 0 |

The Salt Creek and Tributaries project consists of ten dams on tributary streams, as well as levees, channel enlargement, and bridge alterations along the main channel of Salt Creek through Lincoln, Nebraska. The project was completed in 1969.

In 1979 the Omaha District began a flood insurance study at Lincoln for the Federal Emergency Management Agency. The preliminary results of this study indicated that the flood control improvements along Salt Creek in Lincoln did not provide the level of protection for which it was designed. As a result of those findings, a reconnaissance study determined that a feasibility study was warranted under Section 216 of the 1970 Flood Control Act. The study consists of developing and evaluating measures to reduce potential flood damages along Salt Creek through Lincoln and to address a dispersive clay problem which has been identified. A preliminary report of the study was completed in November 1983. The results of the study to date have indicated that structural alternatives to upgrade the entire levee system to the 100-year level of protection are infeasible by a wide margin. However, an opportunity may exist to upgrade segments of the levee system in high damage areas. Additional studies are required to identify courses of action to reduce or eliminate the existing flood damage potential in these areas. Studies are scheduled for completion in September 1987.

| Study | Total Estimated Federal Cost | Allocation Prior To FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional To Complete After FY 1987 |
|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ |
| NORTH DAKOTA | | | | | |
| Cannonball River, Mott, North Dakota | 225,000 | 0 | 80,000 | 145,000 | 0 |

The study area includes the Cannonball River at Mott in southwestern North Dakota. Floods occurred at Mott in 1943, 1950, 1952, 1971, and 1978; the greatest of these was the 1950 flood. The 1978 flood was caused by the rapid melting of exceptionally deep snowpack and ice jams. The Corps of Engineers anticipated flood conditions and constructed a temporary levee along the left bank of the river. Although the temporary levee protected the main business area, flood damages were sustained by 53 residences, 14 trailer homes, 8 businesses, and various public utilities. The floodwaters inundated the western part of Mott with 2 to 4 feet of water and caused the evacuation of 93 families. This study will address the urban flood problem, reevaluate the levee plan authorized by Congress in the 1958 Flood Control Act, and evaluate alternatives to this authorized plan.

Fiscal Year 1986 funds are being used to fully fund the reconnaissance phase at full Federal expense. The funds requested for Fiscal Year 1987 will be used to initiate and complete the feasibility phase of the study. The preliminary estimated cost of the feasibility phase is $290,000, which is to be shared on a 50-50 percent basis by Federal and non-Federal interests. A summary of study cost sharing is as follows:

| | |
|---|---|
| Total Estimated Study Cost | $370,000 |
| Reconnaissance Phase (Federal) | 80,000 |
| Feasibility Phase (Federal) | 145,000 |
| Feasibility Phase (Non-Federal) | 145,000 |

The reconnaissance phase is scheduled for completion in October 1986. The feasibility study is scheduled for completion in September 1987.

| Study | Total Estimated Federal Cost | Allocation Prior To FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional To Complete After FY 1987 |
|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ |
| Total - Project Review Studies | 635,000 | 265,000 | 80,000 | 290,000 | 0 |
| TOTAL SURVEYS - CONTINUING | 11,432,000 | 7,612,000 | 1,733,000 | 1,658,000 | 429,000 |

3. SURVEYS - CONTINUATION OF PLANNING AND ENGINEERING STUDIES:

a. Navigation Studies: None

b. Flood Damage Prevention Studies: The amount of $665,000 is requested in Fiscal Year 1987 for completion of two planning and engineering studies.

COLORADO

| | | | | | |
|---|---|---|---|---|---|
| Westerly Creek, Colorado | 490,000 | 0 | 250,000 | 240,000 | 0 |

The Westerly Creek basin lies almost entirely in the urbanized Metropolitan Denver area. Westerly Creek drains an area of about 18 square miles and includes portions of Aurora, Denver, and Lowry Air Force Base. Urbanization has increased runoff, thereby reducing the effectiveness and threatening the integrity of Kelly Road Dam. Emergency measures were constructed in Fiscal Year 1979 to reduce the potential for catastrophic failure; however, the current level of protection provided by the modified dam is still relatively low. The proposed improvements, as recommended by the Chief of Engineers, consist of modifications of Kelly Road Dam; construction of a new impoundment, Upper Lowry Dam; and construction of two drainage channels into the Upper Lowry impoundment. Other recommended measures, which are non-structural in nature, include enforcement of flood plain regulations, and evaluation and modification of the present flood warning and emergency evacuation plan.

| Study | Total Estimated Federal Cost | Allocation Prior To FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional To Complete After FY 1987 |
|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ |
| Westerly Creek, (Cont'd)<br>Colorado | | | | | |

The cost of implementation, based on October 1985 price levels, is estimated to be $10,792,000. Consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, local interests will be required to pay for the two proposed drainage channels into the Upper Lowry impoundment, presently estimated at $792,000; pay 17.7 percent of the total project costs, presently estimately at $1,906,000; and provide a cash contribution of $58,000, which represents the present worth of the average annual costs for the estimated operation and maintenance of the two proposed drainage channels into the upper Lowry impoundment. The average annual costs, based upon an interest rate of 8-5/8 percent and a 100-year period of analysis, is estimated at $1,246,100. The average annual benefits are estimated at $1,682,000. The benefit-cost ratio is 1.4 to 1. Fiscal Year 1986 funds are being used to obtain necessary soil borings and mapping to initiate studies for a General Design Memorandum and to coordinate these studies and cost-sharing requirements with the project sponsor. The funds requested for Fiscal Year 1987 will be used to complete planning and engineering studies and coordination with local sponsors. The General Design Memorandum is scheduled for completion in September 1987.

MISSOURI

| | | | | | |
|---|---|---|---|---|---|
| Brush Creek, Kansas City,<br>Missouri | 775,000 | 0 | 350,000 | 425,000 | 0 |

The project is along Brush Creek, a tributary of the Blue River in Kansas City, Missouri, from just downstream of Roanoke Road for a distance of approximately 7,500 feet downstream to a point just below Troost Avenue. The plan of improvement consists of deepening the Brush Creek channel bottom in this reach by an average of five feet. Excavation would be restricted to the existing channel bottom except in the area between Oak and Locust Streets, where an open channel would replace the existing conduit. The Oak Street bridge would be replaced, and the Kansas City Public Service Railroad bridge would be removed. Two new predestrian bridges would be constructed, and the existing recreation trail would be replaced with a new trail adjacent to the channel. A low-cost nonstructural flood-warning system also is included.

| Study | Total Estimated Federal Cost | Allocation Prior To FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional To Complete After FY 1987 |
|---|---|---|---|---|---|
| | $ | | $ | $ | $ |
| Brush Creek, Kansas City, Missouri (Cont'd) | | | | | |

Brush Creek drains a highly urbanized 29 square-mile area in Kansas City, Missouri, and Johnson and Wyandotte Counties in Kansas. In September 1977 a disastrous flood struck the basin, causing the loss of 12 lives and over $66,000,000 in economic losses. The plan will provide protection greater than the 100-year flood, for most critically damaged areas. Average annual damages for the project area would be reduced by about 85 percent, or from $2,033,700 to $300,200 (1 October 1985 values).

The non-Federal sponsor, Kansas City, Missouri, has proposed additional channel improvements to reduce flood damages in the Brush Creek basin. The city has expressed interest in spending approximately $10 million in the area contiguous to the upstream end of the recommended project and approximately $10 million in the basin downstream of the project. The city and the Corps of Engineers are considering the merits of Corps involvement in a portion of this additional work through contributed funds by the city. Kansas City has acknowledged that the additional improvements, if any, would not alter the non-Federal sponsorship requirements of the recommended Federal project.

The cost of implementation, based on October 1985 price levels, is estimated to be $16,130,000. Consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, local interests will be required to provide lands, easements, rights-of-way, and required disposal areas, presently estimated at #315,000; modify or relocate buildings, utilities, roads, and other facilities, except railroad bridges, where necessary in the construction of the project, presently estimated at $2,415,000; pay 8.1 percent of the costs of the flood control project, presently estimated at $1,302,000; and bear all costs of operation, maintenance and replacement of flood control facilities, presently estimated $13,400 annually. The average annual costs, based upon an interest rate of 8-5/8 percent and a 100-year period of analysis, are estimated at $1,405,100. The average annual benefits are estimated to be $1,763,000. The benefit-cost-ratio is 1.3 to 1.

Fiscal Year 1986 funds are being used to initiate the General Design Memorandum and environmental assessments, including cultural resource surveys. Funds requested for Fiscal Year 1987 will be used to complete the General Design Memorandum, the cultural resource surveys, and an Enviromental Impact Statement Supplement.

| Study | Total Estimated Federal Cost | Allocation Prior To FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional To Complete After FY 1987 |
|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ |
| Total - Flood Damage Prevention Studies | 1,265,000 | 0 | 600,000 | 665,000 | 0 |
| c. Shoreline Protection Studies: None | | | | | |
| d. Special Studies: None | | | | | |
| e. Comprehensive Studies: None | | | | | |
| f. Project Review Studies: None | | | | | |
| TOTAL - SURVEYS - CONTINUATION OF PLANNING AND ENGINEERING STUDIES | 1,265,000 | 0 | 600,000 | 665,000 | 0 |
| 4. PHASE I STAGE OF ADVANCE ENGINEERING AND DESIGN - NEW: None | | | | | |
| 5. PHASE I STAGE OF ADVANCE ENGINEERING AND DESIGN - CONTINUING: None | | | | | |
| 6. PHASE I STAGE OF ADVANCE ENGINEERING AND DESIGN - CONTINUATION OF PLANNING AND ENGINEERING STUDIES: None | | | | | |
| GRAND TOTAL - SURVEYS AND PHASE I STAGE OF ADVANCE ENGINEERING AND DESIGN | 13,217,000 | 7,612,000 | 2,333,000 | 2,843,000 | 429,000 |

APPROPRIATION TITLE: Construction, General - Reservoirs (Flood Control)

**PROJECT: Chatfield Lake, Colorado (Continuing)**

**LOCATION**: The dam is located in Douglas and Jefferson Counties on the South Platte River, just below the mouth of Plum Creek, about 8 miles upstream from Denver, Colorado. The downstream channel improvements will be located in Arapahoe and Jefferson Counties along the South Platte River from the damsite to near the Denver city limits.

**AUTHORIZATION**: 1950 Flood Control Act Modified by Water Resources Development Act of 1974.

**BENEFIT-COST RATIO**: The remaining benefit - remaining cost ratio is 4.5 to 1 at 3-1/8 percent. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1967) was 3.8 to 1. The benefit-cost ratio was based on the project functioning independently for control of floods originating above the damsite and with Cherry Creek Lake in place.

| SUMMARIZED FINANCIAL DATA | | | Accumulated % of Est Fed Cost |
|---|---|---|---|
| Estimated Federal Cost | | $ 95,600,000 | |
| Estimated Non-Federal Cost | | 9,530,000 | |
| Cash Contribution | $ 0 | | |
| Other | | | |
| Downstream Channel Improvement | 5,104,000 | | |
| Recreation Cost Sharing | 1,526,000 | | |
| Acquisition of Water for Recreation Pool | 2,900,000 | | |
| Total Estimated Project Cost | | $105,130,000 | |
| Allocations to 30 September 1985 | | $ 90,599,000 | |
| Conference Allowance for FY 1986 | | 2,700,000 | |
| Allocation for FY 1986 | | 2,700,000 | |
| Allocations to Date | | 93,299,000 | 98 |
| Allocation Requested for FY 1987 | | 1,400,000 | 99 |
| Scheduled Balance to Complete After FY 1987 | | 901,000 | |
| Unscheduled Balance to Complete After FY 1987 | | 0 | |

| STATUS: (1 January 1986) | PERCENT COMPLETE | COMPLETION SCHEDULE |
|---|---|---|
| Land Acquisition | 100 | |
| Relocations | 100 | |
| Reservoir | 100 | |
| Dam (Closure 15 Aug 73) | 100 | |
| Fish and Wildlife Facilities | 0 | Dec 1987 |
| Roads | 100 | |
| Channel | 63 | Dec 1987 |
| Recreation Facilities | 95 | Dec 1987 |
| Buildings & Grounds | 100 | |
| Permanent Operating Equip | 100 | |
| Entire Project | 97 | Dec 1987 |

Division: Missouri River District: Omaha Region: Missouri

Chatfield Lake, Colorado

## PHYSICAL DATA

**Dam:**
Type - Rolled Earthfill Embankment
Height - 148 feet (above streambed)
Length - 12,500 feet

**Relocations:**
Roads - 8.25 mi 4 lanes $4,708,000
Railroads - 2.3 mi mainline $690,000
Water & Sewer Facility $8,095,000
Tele & Power Facility $1,700,000

**Channel Improvement:**
8 miles

**Outlet Works:**
Type - Gate Controlled Concrete
Conduit Size - 11 x 16 feet Oval

**Lands and Damages:**
Acres - 6,934
Type - Predominantly agricultural with transition to commercial and residential development.
Improvements - Residential, farm units, commercial and industrial facilities.

**Reservoir Capacity:**

| | |
|---|---|
| Flood Control | 215,000 acre-feet |
| Sediment (Recreation) | 20,000 acre-feet |
| Total Storage | 235,000 acre-feet |

**Spillway:**
Type - Ungated Concrete Chute
Bottom Width - 500 feet
Length - 1,148 feet

**JUSTIFICATION:** The Chatfield project, operating in conjunction with existing projects, would provide a high degree of flood protection for Denver, Littleton, Englewood and other communities and the agricultural areas along the South Platte River below the damsite. The flood of 16 June 1965, the flood of record of modern times, caused damages in the Denver metropolitan area of about $325,000,000, including damage to 2,033 homes, 6 apartment buildings, 612 business establishments, and 167 house trailers. Although 13 lives were lost in the South Platte Basin, the remarkable fact that no lives were lost in the Denver metropolitan area can only be credited to alert local governmental agencies that compelled prior evacuation from flood hazard areas identified on flood plain information reports published by the Corps of Engineers in 1963. Had the Chatfield project been in operation at the time of the flood, practically all of the damages in the Denver metropolitan area would have been prevented and substantial damage reduction achieved in reaches downstream from Denver. The recreational developments on the lake and downstream channel will provide opportunities for varied water-based activities. The estimated average annual benefits, based on 1 October 1985 prices, are as follows:

| Breakdown of Benefits | Amount |
|---|---|
| Flood Control | $36,531,000 |
| Recreation - General | 1,960,000 |
| Recreation/Fish & Wildlife | 253,000 |
| Total | $38,744,000 |

Chatfield Lake, Colorado

**FISCAL YEAR 1987**: The requested amount will be applied as follows:

| | |
|---|---|
| Fish & Wildlife mitigation on downstream channel | $ 75,000 |
| Downstream channel structural improvement | 667,000 |
| Downstream channel recreation facilities | 500,000 |
| Engineering and design | 82,000 |
| Supervision and administration | 76,000 |
| Total | $1,400,000 |

**NON-FEDERAL COSTS**: For the lake component of the Chatfield project, local interests must provide the rights to water for recreational purposes in the lake area. The estimated cost for providing this water is $2.9 million. In addition, local interests will operate and maintain the recreational facility in the lake area at an estimated cost of $353,000 annually. For the downstream channel improvement, local interests are required to furnish all lands, easements and rights-of-way, including relocations; hold and save the Federal Government free from damages; and operate and maintain the completed channel improvement. The current estimated non-Federal costs for the downstream channel improvements are $5,104,000; recreation cost sharing is $1,526,000; and operation and maintenance is $318,000 annually, of which $168,000 is for recreation.

**STATUS OF LOCAL COOPERATION**:

a. Lake. The State of Colorado on 25 April 1967 agreed to furnish necessary water for filling the sediment reserve pool and replacing annual evaporation losses.

b. Downstream Channel Structural Improvement. Acting through the Colorado Water Conservation Board, the State of Colorado furnished assurances of local cooperation on 13 December 1967 for the channel improvement project between Chatfield Lake and Denver. The 1979 Colorado Legislature appropriated funds for the project, and a supplemental agreement to the Section 221 Contract was consummated on 6 August 1980.

The only remaining right-of-way acquisition required is for the Stage 3 contract.

c. Littleton Plan. Section 88 of the 1974 Water Resource Development Act modified the authorized channel improvement to provide for participation by the Corps, with non-Federal interests, in the acquisition of flood plain lands immediately downstream from Chatfield Dam in lieu of constructing about 2 miles of the authorized channel improvement. A Section 221 contractual agreement was signed on 29 September 1977 with the Colorado Water Conservation Board covering this portion of the project. The Federal Government has contributed $756,000 for the park land acquisition.

d. Downstream Channel Recreational Development. The plan is to cost share with local interests on initial development along the South Platte River between Chatfield Lake and Denver. In addition to the Section 221 contracts noted in paragraphs b and c above, a 221 contract is required for recreation cost sharing in the downstream reaches. The local sponsor is the South Suburban Metropolitan Recreation and Park District. The contract is scheduled to be signed by the local sponsor by March 1986.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $95,600,000 is a decrease of $400,000 from the latest estimate ($96,000,000) submitted to Congress. This change includes a decrease of $63,000 for adjustments in the estimated inflation allowance through the construction period. Unused contingencies on Stage 1, modifications on the Union Avenue Weir contract, favorable bid on Stage 2, and refining the estimate of Stage 3 resulted in a decrease of $378,000. Minor changes in other features resulted in an increase of $11,000. Reanalysis of remaining requirements increased engineering and design costs by $30,000.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The final Environmental Impact Statement (EIS) covering the dam and lake area was filed with the Council on Environmental Quality (CEQ) on 3 April 1975. This statement did not include any recommended action on the South Platte River between Chatfield Lake and Denver. A supplement to the final statement for this part of the project was filed with CEQ on 3 June 1977. An indorsement to the downstream channel improvement Phase I design memorandum was completed 3 January 1983 and explains changes in channel hydrology since the EIS Supplement was prepared. National Environmental Policy Act (NEPA) documentation needed for this project depends to large extent on whether the city of Littleton continues with plans for the Ken Caryl Road crossing. A Supplemental Information Report (SIR) was completed in March 1985, but it did not address the road crossing construction. In order to supplement our own EIS, we must have a commitment by the city as to what their final plans are.

The provisions of Section 404 of the Clean Water Act have been met for the downstream channel by a Section 404(b)(1) Evaluation completed on 3 March 1983, a Public Notice issued on 9 March 1983, a Certification issued by the State of Colorado on 11 April 1983, and the District Commander's signature on the Final Section 404(b)(1) Evaluation Report on 17 May 1983. An amended report for structural alterations and disposal areas was completed in January 1984.

OTHER INFORMATION: Funds to initiate planning were appropriated in FY 1955. Planning was suspended the following year due to lack of local support. Remaining funds were revoked and the project was reclassified "Inactive." Funds to resume planning were appropriated in FY 1966 and to initiate construction in FY 1967.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

**Division:** Missouri River
**District:** Omaha

**Project:** Chatfield Lake, Colorado

| Item | Estimates Presented to Congress ($1,000)<br>Original Baseline (1) | Cumulative Changes (2) | Last (3) | Incremental Change (4) | Current (5) |
|---|---|---|---|---|---|
| Federal Cost<br>(Price Level) | 74,000<br>(Jul 65) | | 96,000[1] | | 95,600[1][2] |
| Reason for Change | | (22,000)[1] | | (-400)[2] | |
| a. Price Escalation (Excludes Real Estate Escalation) | | 19,185 | | -63 | |
| b. Design Changes | | 4,876 | | 0 | |
| c. Additional Function Added Under General Authorization | | 582 | | 0 | |
| d. Authorized Modification | | 0 | | 0 | |
| e. Post-Contract Award and Other Estimating Adjustments | | 5,174 | | -337 | |
| f. Schedule Changes | | 0 | | 0 | |
| g. Sundry | | 123 | | 0 | |
| h. Real Estate | | -7,940 | | 0 | |

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1/ Includes an allowance for estimated inflation through the construction period.

2/ Includes $-63,000.00 for adjustments in the estimated inflation allowance through the construction period.

REPORTS CONTROL SYMBOL: DAEN-CWB-13

| | |
|---|---|
| APPROPRIATION TITLE: CONSTRUCTION GENERAL | CLASSIFICATION: RESERVOIRS (FLOOD CONTROL) |

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 1986 AND 19 87

| LINE NO | ITEM (a) | PROJECT COST ESTIMATE (b) | TOTAL TO 30 SEP 1985 (c) | CURRENT FY 1986 (d) | BUDGET FY 1987 (e) | BALANCE TO COMPLETE AFTER FY 1987 (f) |
|---|---|---|---|---|---|---|
| 1 | LANDS AND DAMAGES | 15,595,000 | 15,595,000 | | | |
| 2 | | | | | | |
| 3 | RELOCATIONS | 15,193,000 | 15,193,000 | | | |
| 4 | | | | | | |
| 5 | RESERVOIRS | 1,116,000 | 1,116,000 | | | |
| 6 | | | | | | |
| 7 | DAMS | 31,729,000 | 31,729,000 | | | |
| 8 | | | | | | |
| 9 | FISH AND WILDLIFE FACILITY | 201,000 | 0 | 0 | 75,000 | 126,000 |
| 10 | | | | | | |
| 11 | ROADS | 397,000 | 397,000 | | | |
| 12 | | | | | | |
| 13 | CHANNELS | 7,476,000 | 3,574,000 | 2,662,000 | 667,000 | 573,000 |
| 14 | | | | | | |
| 15 | RECREATIONAL FACILITIES | 10,596,000 | 9,904,000 | 0 | 500,000 | 192,000 |
| 16 | | | | | | |
| 17 | BUILDINGS, GROUNDS, AND UTILITIES | 1,431,000 | 1,431,000 | | | |
| 18 | | | | | | |
| 19 | PERMANENT OPERATING EQUIPMENT | 71,000 | 71,000 | | | |
| 20 | | | | | | |
| 21 | ENGINEERING AND DESIGN | 7,788,000 | 7,636,000 | 67,000 | 82,000 | 3,000 |
| 22 | | | | | | |
| 23 | SUPERVISION AND ADMINISTRATION | 4,007,000 | 3,756,000 | 168,000 | 76,000 | 7,000 |
| 24 | | | | | | |
| 25 | TOTAL APPLIED COST (FED FUNDS ONLY) | 95,600,000 | 90,402,000 | 2,897,000 | 1,400,000 | 901,000 |
| 26 | Undistributed Costs - NONE | | | | | |
| 27 | TOTAL PROJECT COST (FED FUNDS ONLY) | 95,600,000 | 90,402,000 | 2,897,000 | 1,400,000 | 901,000 |
| 28 | Pending Adjustments - NONE | | | | | |
| 29 | TOTAL COST (FED FUNDS ONLY) | 95,600,000 | 90,402,000 | 2,897,000 | 1,400,000 | 901,000 |
| 30 | Undelivered Orders | | 126,000 | -126,000 | | |
| 31 | TOTAL OBLIGATIONS | | 90,528,000 | 2,771,000 | 1,400,000 | 901,000 |
| 32 | | | | | | |
| 33 | | | | | | |

| | | | |
|---|---|---|---|
| EFFECTIVE DATE<br>1 JAN 86 | DIVISION MISSOURI RIVER<br>DISTRICT OMAHA | REGION MISSOURI<br>BASIN SOUTH PLATTE | PROJECT<br>CHATFIELD LAKE, COLORADO |

ENG FORM 2200 [illegible] 4 FEB 1986

REPORTS CONTROL SYMBOL: DAEN-CWB-13

| | |
|---|---|
| APPROPRIATION TITLE: CONSTRUCTION GENERAL | CLASSIFICATION: RESERVOIRS (FLOOD CONTROL) |

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 1986 AND 1987

| LINE NO | ITEM (a) | PROJECT COST ESTIMATE (b) | TOTAL TO 30 SEP 19 85 (c) | CURRENT FY 19 86 (d) | BUDGET FY 19 87 (e) | BALANCE TO COMPLETE AFTER FY 19 87 (f) |
|---|---|---|---|---|---|---|
| 1 | METHOD OF FINANCING | | | | | |
| 2 | FEDERAL FUNDS | | | | | |
| 3 | Allocations | | 90,599,000 | 2,700,000 | | |
| 4 | Unobligated Carryover from Prior Years | | | 71,000 | | |
| 5 | Total Funds Available for Obligation | | | 2,771,000 | | |
| 6 | Appropriations Required | | | | 1,400,000 | 901,000 |
| 7 | | | | | | |
| 8 | | | | | | |
| 9 | NON-FEDERAL COSTS | | | | | |
| 10 | Cash Contribution - NONE | | | | | |
| 11 | Other Costs | | | | | |
| 12 | Lands-Downstream Channel Improvement | 1,596,000 | 1,196,000 | 400,000 | | |
| 13 | Relocations-Downstream Channel | | | | | |
| 14 | Improvement | 3,508,000 | 2,908,000 | 600,000 | | |
| 15 | Recreation Cost-Sharing-Downstream | | | | | |
| 16 | Channel Improvement | 1,526,000 | 0 | 694,000 | 832,000 | |
| 17 | Acquisition of Water for | | | | | |
| 18 | Recreation Pool | 2,900,000 | 2,900,000 | | | |
| 19 | Total Non-Federal Costs | 9,530,000 | 7,004,000 | 1,694,000 | 832,000 | |
| 20 | | | | | | |
| 21 | | | | | | |
| 22 | TOTAL PROJECT COSTS | | | | | |
| 23 | Federal (Corps) Costs and | | | | | |
| 24 | Non-Federal Costs | 105,130,000 | 97,406,000 | 4,591,000 | 2,232,000 | 901,000 |
| 25 | | | | | | |
| 26 | | | | | | |
| 27 | | | | | | |
| 28 | | | | | | |
| 29 | | | | | | |
| 30 | | | | | | |
| 31 | | | | | | |
| 32 | | | | | | |
| 33 | | | | | | |

| | | | |
|---|---|---|---|
| EFFECTIVE DATE 1 JAN 86 | DIVISION MISSOURI RIVER | REGION MISSOURI | PROJECT |
| | DISTRICT OMAHA | BASIN SOUTH PLATTE | CHATFIELD LAKE, COLORADO |

ENG FORM 2200 [illegible] EDITION OF [illegible] IS OBSOLETE 4 FEB 1986

APPROPRIATION TITLE: Construction, General - Local Protection Projects (Flood Control)

PROJECT: Missouri River Levee System, Iowa, Nebraska, Kansas and Missouri (Active Units) (Continuing)

LOCATION: Along both sides of the Missouri River, Sioux City, Iowa, to the Mouth.

AUTHORIZATION: 1941 and 1944 Flood Control Acts

BENEFIT-COST RATIO: The remaining benefit - remaining cost ratio is 1.5 to 1 at 2 1/2 percent. This project was a part of the comprehensive plan for the Missouri River Basin for which the benefit-cost ratio was 1.5 to 1 in support of the initial construction appropriation requested in FY 1948.

| SUMMARIZED FINANCIAL DATA | | | Accumulated % of Est. Fed. Cost |
|---|---|---|---|
| Estimated Federal Cost | | $248,000,000 | |
| Estimated non-Federal Cost | | 63,018,000 1/ | |
| Cash Contribution | $33,000,000 | | |
| Other Costs | 30,018,000 | | |
| Estimated Project Cost | | $311,018,000 | |
| Allocations to 30 September 1985 | | $88,958,000 | |
| Conference Allowance for FY 1986 | | 850,000 | |
| Allocation for FY 1986 | | 850,000 | |
| Allocations to Date | | 89,808,000 | 36 |
| Allocation Requested for FY 1987 | | 800,000 | 36 |
| Scheduled Balance to Complete after FY 1987 | | 3,310,000 | |
| Unscheduled Balance to Complete after FY 1987 | | 154,082,000 2/ | |

| PHYSICAL DATA | |
|---|---|
| LEVEES | |
| Average Height | 14 feet |
| Length | 540 miles |
| Area Protected | 427,000 acres |

1/ In addition, numerous flood control works have been constructed over many years by individuals and groups as land along the Missouri River has been developed for agricultural use. The total cost of these improvements is unknown.

2/ Preconstruction planning for Unit L385 is scheduled to be completed in FY 1988, for Units L330-345 and L319-325 in FY 1992, and for Unit L15 in FY 1991, after which they will be considered for construction.

4 FEB 1986

## STATUS
(1 January 1986)

| | | PERCENT COMPLETE | COMPLETION SCHEDULE |
|---|---|---|---|
| L624-627, R613, L601, L594, R580, L575, R573, R562, L550-561, R548, L536, R520, R512-513, R500, Kimsey-Holly Creek, L497, L488, R482, L476, R460-471, L455, L443-448, R440, L408, L400, & R351 | | 100 | |
| Bellevue-Papillion Creek Levees | (R616) | 99 | Jun 1986 |
| Mosquito-Keg Creek Levees (formerly McCartney District) | (L611-614) | 99 | Jun 1986 |
| Riverside Levee & Drainage District & Quindaro Bend Levee District | (L385) | 0 | Unscheduled |
| Orrick Drainage and Levee District | (L330-345) | 0 | Unscheduled |
| Ray-Lafayette Drainage District & Henrietta-Crooked River Drainage & Levee District | (L319-325) | 0 | Unscheduled |
| Brunswick-Dalton Drainage District | (L246) | 100 | |
| North County Levee District | (L15) | 0 | Unscheduled |
| Entire Active Program | | 94 | Jun 1986 1/ |

1/ Completion date is for units currently underway. The balance of the units are unscheduled.

JUSTIFICATION: The active units of the authorized Missouri River Levee System, in conjunction with existing and authorized upstream reservoirs, will provide protection against destructive floods of a magnitude equal to those of past record for 427,000 acres of agricultural lands, highways, railroads, and utility lines, as well as many small communities in the Missouri River flood plain from Omaha, Nebraska, to the mouth. From 1943 thru 1985, 74 floods have been experienced along the lower reaches of the Missouri River. The estimated average annual benefits, all flood control, for all completed and active units between Sioux City and the mouth, based on 1 October 1985 prices, are $22,119,000.

FISCAL YEAR 1987: The requested amount will be applied as follows:

| | |
|---|---|
| Riverside Levee and Drainage District and Quindaro Bend Levee District (L385) | |
| Continue engineering and design | $230,000 |
| Orrick Drainage and Levee District (L330-345) | |
| Continue engineering and design | 190,000 |
| Ray-Lafayette Drainage District & Henrietta-Crooked River Drainage and Levee District (L319-325) | |
| Continue engineering and design | 230,000 |
| North County Levee District (L15) | |
| Continue engineering and design | 150,000 |
| Total | $800,000 |

NON-FEDERAL COSTS: The investment of local interests for completed units and units under construction of the overall project is estimated at $8,723,500 broken down as follows:

| | |
|---|---|
| Lands | $6,821,800 |
| Relocation of highways, roads, utilities, buildings, etc., and interior drainage | 1,901,700 |
| Total | $8,723,500 |

Local interests were required to provide without cost to the United States all lands, easements, and rights-of-way necessary for the construction of the project, hold and save the United States free from damages due to construction of the works, and maintain and operate all the works after completion. The annual cost for operation and maintenance of these units is estimated at $524,700 (1 October 1985).

The cost of unscheduled Units L385, L330-345, L319-325 and L15, based on October 1985 price levels, is estimated to be $217,370,500. Consistent with the cost-sharing and financing concepts agreed to by the Administration and the Senate majority leadership, local interests will be required to provide lands, easements, rights-of-way, and required disposal areas, presently estimated at $15,352,000; modify or relocate buildings, utilities, roads, and other facilities, except railroad bridges, where necessary in the construction of the project, presently estimated at $5,942,500; pay 15.2 percent of the costs of the flood control units, presently estimated at $33,000,000; and bear all costs of operation, maintenance and replacement of flood control facilities, presently estimated at $345,700 annually.

STATUS OF LOCAL COOPERATION:

The Quindaro Bend Levee District and the Riverside Levee and Drainage District will be joint sponsors of Unit L385. In August 1982, both sponsors provided new letters of intent to sponsor the levee unit and acknowledged the Department of the Army's cost-sharing policy then in effect. A public meeting was held on 2 December 1982. Response at the meeting was positive. The Reevaluation Report was completed 17 May 1983 and revised in September 1983. A record of decision was signed by the Division Engineer in March 1984. The General Design memorandum is scheduled to be submitted in February 1987.

The Orrick Levee and Drainage District, sponsor of Unit L330-345, had obtained options for all but five tracts of land and was proceeding with condemnation on these tracts when the Corps recommended in January 1971 that right-of-way acquisition be postponed. This recommendation was based on anticipated changes that could occur as a result of the National Environmental Policy Act of 1969. An economic review of this unit was completed in September 1983. The results indicated that alternative plans are well justified at the authorized interest rate and nearly justified at the current interest rate. The review shows that additional study is justified; however, a general reevaluation of the project documenting economic, environmental, and other social effects of these and

and nearly justified at the current interest rate. The review shows that additional study is justified; however, a general reevaluation of the project documenting economic, environmental, and other social effects of these and possible additional alternatives is required prior to reaching a decision on whether to proceed with construction of the unit. The Reevaluation Report is scheduled to be submitted in May 1989.

There are two sponsors for the L319-325 levee unit. The Henrietta-Crooked River Drainage and Levee District is the sponsor for the L319 portion of the unit. Under provisions of Section 215 of the Flood Control Act of 1968, the Henrietta-Crooked River Drainage and Levee District entered into a cost-reimbursable contract with the Government on 14 November 1969 to enlarge the downstream 2 miles of the Crooked River channel and construct spoil levees on both banks as approved by the Corps. The work was completed in 1972. Federal reimbursement is contingent upon this unit being incorporated into a Federally constructed project. The Ray-Lafayette Drainage District, sponsor of the L325 portion of the unit, requested by resolution dated 20 October 1975 that the Corps further study their area and construct the necessary improvements. Their resolution also indicated their intent to comply with the required local cooperation for construction of a project. Both sponsors are awaiting planning studies by the Corps. The Reevaluation Report is scheduled to be completed in November 1988.

The North County Levee District would be the non-Federal sponsor for Unit L15. Local interests expressed renewed interest in L15 during late 1983. A number of meetings were held near the project area, and a high level of interest in the project was evident. The St. Charles County Court sent a letter to the Corps dated 21 December 1983 requesting reevaluation of the unit. Based on this interest, the unit was reclassified from the inactive to active status in March 1984. The Reevaluation Report is scheduled to be completed in September 1987.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $248,000,000 for the active program is a decrease of $27,000,000 from the latest estimate ($275,000,000) submitted to Congress. Price level adjustments increased costs $4,253,000. This change includes decreases of $33,000,000 based on adjustments between Federal and non-Federal cost estimates consistent with the cost-sharing and financing concepts agreed to by the Administration and the Senate majority leadership. Unit R616 increased $73,000 due to modifications on levee contract. Unit L611-614 increased $821,000 due to contract modifications and overruns on levees, actual bid on additional drainage improvements, and a real estate claim. Units L385, L330-345, L319-325 and L15 increased a total of $800,000 for additional effort required to complete preconstruction planning on these units. Unit L385 increased $53,000 due to additional effort required on Section 404 analysis to coordinate potential impact of water treatment plants on both Kansas Citys.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The actual or scheduled submission of Environmental Impact Statements (EIS) to the Environmental Protection Agency and compliance with Section 404 Clean Water Act for individual units of the Missouri River Levee System are as follows:

| | EIS | | Section 404 Authorization |
|---|---|---|---|
| | Draft | Final | |
| Riverside Levee and Drainage District and Quindaro Bend Levee District (L385) | 26 Nov 1982 | 18 Nov 1983 | 1/ |
| Orrick Drainage and Levee District (L330-345) | Oct 1988 | Jun 1989 | 2/ |
| Ray-Lafayette Drainage District and Henrietta-Crooked River Drainage and Levee District (L319-325) | Apr 1988 | Dec 1988 | 3/ |
| North County Levee District (L15) | Jan 1987 | Oct 1987 | 4/ |

1/ The provisions of Section 404 of the Clean Water Act are scheduled to be met by a Section 404(b)(1) Evaluation and a Public Notice Certification by the State of Missouri, and the District Engineer's signature on the 404(b)(1) Evaluation Report in the second quarter FY 1986.

2/ The provisions of Section 404 of the Clean Water Act are scheduled to be met by a Section 404(b)(1) Evaluation and a Public Notice, Certification by the State of Missouri, and the District Engineer's signature on the 404(b)(1) Evaluation Report in the third quarter FY 1991.

3/ The provisions of Section 404 of the Clean Water Act are scheduled to be met by a Section 404(b)(1) Evaluation and a Public Notice, Certification by the State of Missouri, and the District Engineer's signature on the 404(b)(1) Evaluation Report in the first quarter FY 1991.

4/ The provisions of Section 404 of the Clean Water Act are scheduled to be met by a Section 404(b)(1) Evaluation and a Public Notice, Certification by the State of Missouri, and the District Engineer's signature on the 404(b)(1) Evaluation Report in the first quarter FY 1990.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1946 and to initiate construction in FY 1948.

## HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

**Division:** Missouri River
**District:** Kansas City

**Project:** Missouri River Levee System, Iowa, Nebraska, Kansas and Missouri

| Item | Estimates Presented to Congress ($1,000) | | | | |
|---|---|---|---|---|---|
| | Original Baseline | Cumulative Change | Last | Incremental Changes | Current |
| Federal Cost | 94,800 | | 275,000 1/ | | 248,000 1/ |
| (Price Level) | (Jul 46) | | | | |
| Reason for Change | | (180,200) | | (-27,000) | |
| a. Price Escalation | | 172,308 | | 4,253 | |
| b. Design Changes | | 14,412 | | | |
| c. Additional Function Added Under General Authorization | | 586 | | | |
| d. Authorized Modification | | | | | |
| e. Post-Contract Award and Other Estimating Adjustments | | 13,807 | | 1,747 | |
| f. Scheduling Changes | | | | | |
| g. Sundry | | -20,913 2/ | | -33,000 3/ | |
| h. Real Estate | | | | | |

1/ This estimate is not inflated, as all remaining construction work is unscheduled.

2/ Reflects a net decrease of $34,200,000 for all adjustments prior to July 1961. Also reflects transfers of units in and out of the active category for a net reduction of $28,829,000 and minor increases totaling $411,000. Reflects an increase of $40,686,000 for transferring Unit L15 into the active program, adding $19,000 for cultural resource work for Unit L15, and $1,000,000 for review of deferred and inactive projects.

3/ A decrease of $33,000,000 based on adjustments between Federal and non-Federal cost estimates consistent with the cost-sharing and financing concepts agreed to by the Administration and the Senate majority leadership.

REPORTS CONTROL SYMBOL: DAEN-CWB-13

| | |
|---|---|
| APPROPRIATION TITLE: CONSTRUCTION GENERAL | CLASSIFICATION: LOCAL PROTECTION (FLOOD CONTROL) |

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 1986 AND 1987

| LINE NO | ITEM (a) | PROJECT COST ESTIMATE (b) | TOTAL TO 30 SEP 1985 (c) | CURRENT FY 1986 (d) | BUDGET FY 1987 (e) | BALANCE TO COMPLETE AFTER FY 1987 (f) |
|---|---|---|---|---|---|---|
| 1 | COMPLETED UNITS: L624-627; R613; L601; | | | | | |
| 2 | Remedial Studies on Completed Units | | | | | |
| 3 | (L624-627 & L550-561); L594; R580; L575; | | | | | |
| 4 | R573; R562; L550-561; R548; L536; R520; | | | | | |
| 5 | R512-513; R500; Kimsey-Holly Creek; L497; | | | | | |
| 6 | L488; R482; L476; R460-471; L455; L443- | | | | | |
| 7 | 448; R440; L408; L408 Modification; L400; | | | | | |
| 8 | & R351 | 51,545,000 | 51,545,000 | | | |
| 9 | BELLEVUE-PAPILLION CREEK LEVEES R616 | 3,510,000 | 3,326,000 | 133,000 | | 51,000 |
| 10 | MOSQUITO-KEG CREEK LEVEE L611-614 | 14,862,000 | 14,567,000 | 220,000 | | 75,000 |
| 11 | RIVERSIDE LEVEE & DRAINAGE DISTRICT & | | | | | |
| 12 | QUINDARO BEND LEVEE DISTRICT L385 | 33,900,000 | 1,319,000 | 250,000 | 230,000 | 32,101,000 |
| 13 | ORRICK DRAINAGE & LEVEE DISTRICT | | | | | |
| 14 | L330-345 | 62,266,000 | 1,945,000 | | 190,000 | 60,131,000 |
| 15 | RAY-LAFAYETTE DRAINAGE DISTRICT & | | | | | |
| 16 | HENRIETTA-CROOKED RIVER DRAINAGE & | | | | | |
| 17 | LEVEE DISTRICT L319-325 | 24,100,000 | 1,144,000 | | 230,000 | 22,726,000 |
| 18 | BRUNSWICK-DALTON DRAINAGE DISTRICT L246 | 14,007,000 | 14,007,000 | | | |
| 19 | NORTH COUNTY LEVEE DISTRICT L15 | 75,810,000 | 1,052,000 | 250,000 | 150,000 | 74,358,000 |
| 20 | REVIEW OF DEFERRED & INACTIVE UNITS | 1,000,000 | | 50,000 | | 950,000 |
| 21 | TOTAL APPLIED COST (Fed&Non-Fed Contrb) | 281,000,000 | 88,905,000 | 903,000 | 800,000 | 190,392,000 |
| 22 | Undistributed Cost - None | | | | | |
| 23 | TOTAL PROJECT COST (Fed&Non-Fed Contrb) | 281,000,000 | 88,905,000 | 903,000 | 800,000 | 190,392,000 |
| 24 | Pending Adjustments - None | | | | | |
| 25 | TOTAL COST (Fed & Non-Fed Contrb) | 281,000,000 | 88,905,000 | 903,000 | 800,000 | 190,392,000 |
| 26 | Undelivered Orders (Fed&Non-Fed Contrb) | | 50,000 | -50,000 | | |
| 27 | TOTAL OBLIGATIONS (Fed & Non-Fed Contrb) | | 88,955,000 | 853,000 | 800,000 | 190,392,000 |
| 28 | | | | | | |
| 29 | SUMMARY OF ESTIMATED COSTS | | | | | |
| 30 | TOTAL FEDERAL COSTS | 248,000,000 | 88,905,000 | 903,000 | 800,000 | 157,392,000 |
| 31 | TOTAL NON-FEDERAL CONTRIBUTIONS | 33,000,000 | | | | 33,000,000 |
| 32 | TOTAL FEDERAL & NON-FEDERAL COSTS | 281,000,000 | 88,905,000 | 903,000 | 800,000 | 190,392,000 |
| 33 | | | | | | |

| | | | |
|---|---|---|---|
| EFFECTIVE DATE<br>1 JAN 1986 | DIVISION MISSOURI RIVER<br>DISTRICT KANSAS CITY | REGION MISSOURI<br>MISSOURI, SIOUX CITY,<br>BASIN OMAHA | PROJECT MISSOURI RIVER LEVEE SYSTEM<br>IOWA, NEBRASKA, KANSAS & MISSOURI |

ENG FORM 1 SEP 74 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE.

4 FEB 1986

REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: LOCAL PROTECTION (FLOOD CONTROL)

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM (a) | PROJECT COST ESTIMATE (b) | TOTAL TO 30 SEP 19 85 (c) | CURRENT FY 19 86 (d) | BUDGET FY 19 87 (e) | BALANCE TO COMPLETE AFTER FY 19 87 (f) |
|---|---|---|---|---|---|---|
| 1 | METHOD OF FINANCING | | | | | |
| 2 | FEDERAL FUNDS | | | | | |
| 3 | Allocations | | 88,958,000 | 850,000 | | |
| 4 | Unobligated Carryover from Prior Year | | | 3,000 | | |
| 5 | Total Funds Available for Obligation | | | 853,000 | | |
| 6 | Appropriation Required | | | | 800,000 | 157,392,000 1/ |
| 7 | | | | | | |
| 8 | NON-FEDERAL FUNDS | | | | | |
| 9 | Cash Contributions | 33,000,000 | | | | 33,000,000 |
| 10 | Other Costs | | | | | |
| 11 | Lands and Damages | 22,174,000 | 6,822,000 | | | 15,352,000 |
| 12 | Relocations | 7,444,000 | 1,501,000 | | | 5,943,000 |
| 13 | Interior Drainage | 400,000 | 400,000 | | | |
| 14 | Total Non-Federal Costs | 63,018,000 | 8,723,000 | | | 54,295,000 |
| 15 | | | | | | |
| 16 | TOTAL PROJECT COSTS - FEDERAL | | | | | |
| 17 | AND NON-FEDERAL | 311,018,000 | 97,681,000 | 850,000 | 800,000 | 211,687,000 |
| 18 | | | | | | |
| 19 | | | | | | |
| 20 | | | | | | |
| 21 | 1/ Includes $154,082,000 for unscheduled work. Preconstruction planning for | | | | | |
| 22 | Unit L385 is scheduled to be completed in FY 1988, and for Units L330-345 | | | | | |
| 23 | and L319-325 in FY 1992, and for L15 in FY 1991, after which they will | | | | | |
| 24 | be considered for construction. | | | | | |
| 25 | | | | | | |
| 26 | | | | | | |
| 27 | | | | | | |
| 28 | | | | | | |
| 29 | | | | | | |
| 30 | | | | | | |
| 31 | | | | | | |
| 32 | | | | | | |
| 33 | | | | | | |

| | | | |
|---|---|---|---|
| EFFECTIVE DATE<br>1 JAN 1986 | DIVISION MISSOURI RIVER<br>DISTRICT KANSAS CITY | REGION MISSOURI<br>BASIN MISSOURI, SIOUX CITY, OMAHA | PROJECT MISSOURI RIVER LEVEE SYSTEM, IOWA, NEBRASKA, KANSAS & MISSOURI |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986

APPROPRIATION TITLE: Construction, General - Local Protection Projects (Flood Control)

PROJECT: Blue River Channel, Kansas City, Missouri (Continuing)

LOCATION: The project is located along the Blue River and tributaries in Kansas City, Jackson County, Missouri, and extends from near its mouth (located at Missouri river mile 358.0) to 63rd Street, channel mile 12.5.

AUTHORIZATION: 1970 Flood Control Act

BENEFIT-COST RATIO: The remaining benefit - remaining cost ratio is 2.1 to 1 at 6 5/8 percent. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1979) was 1.6 to 1. The benefit-cost ratio was based on the project functioning independently.

| SUMMARIZED FINANCIAL DATA | | | Accumulated % of Est. Fed. Cost |
|---|---|---|---|
| Estimated Federal Cost | | $141,000,000 | |
| Estimated Non-Federal Cost | | 21,100,000 | |
| Cash Contributions | $0 | | |
| Other | 21,100,000 | | |
| Total Estimated Project Cost | | $162,100,000 | |
| Allocations to 30 September 1985 | | $11,748,000 | |
| Conference Allowance for FY 1986 | | 5,500,000 | |
| Allocation for FY 1986 | | 5,500,000 | |
| Allocations to Date | | 17,248,000 | 12 |
| Allocation Requested for FY 1987 | | 6,000,000 | 16 |
| Scheduled Balance to Complete after FY 1987 | | 65,852,000 | |
| Unscheduled Balance to Complete after FY 1987 | | 51,900,000 | |

| STATUS: (1 January 1986) | PERCENT COMPLETE | COMPLETION SCHEDULE |
|---|---|---|
| Relocations | 2 | Sep 1987 1/ |
| Blue River, Stages 1 & 2 | 6 | Dec 1992 |
| Blue River, Stage 3 | 0 | Unscheduled |
| Entire Project | 9 | Dec 1992 1/ |

1/ Reflects completion of Stages 1 and 2.

4 FEB 1986

## PHYSICAL DATA

| Bridge Alterations at Federal Cost: | | | | | Bridge Alterations at Non-Federal Cost: |
|---|---|---|---|---|---|
| Highway Bridges - Modify - 1 - $675,000 | | | | | Highway Bridges - Modify - 4 |
| Railroad Bridges - Modify - 15 - $13,227,000 | | | | | |

| New Levees: | Avg. Ht. | Length | Channel Improvement: | Length |
|---|---|---|---|---|
| Levees | 15 ft. | 2.3 miles | Main Stem, Blue River Channel | 12.5 miles |

JUSTIFICATION: The Blue River basin lies completely in the Kansas City Standard Metropolitan Statistical Area, with a 1980 population of about 1.3 million persons. The basin drains an area of 272 square miles and is subject to cloudbursts, prolonged rainstorms, floods, and extended drought periods. The maximum flood of record in the basin occurred in September 1961 causing damages of nearly $8 million. A recurrence of this flood at 1985 conditions would cause damages estimated at $125.5 million. With the authorized channel, a recurrence of the 1961 flood would cause only minor damage in the lower basin area. A flood occurred in August 1982 causing about $3.3 million in flood damages. All of this damage would have been prevented if the project had been in place. The channel project provides for about a 30-year level of protection to 3,400 acres in the lower basin, including the Blue River Valley Industrial District. The estimated annual average benefits, all flood control, based on 1 October 1985 prices, are $18.3 million, of which $13.3 million are existing benefits and $5.0 million are future benefits.

FISCAL YEAR 1987: The requested amount will be applied as follows:

| | |
|---|---|
| Complete relocation of railroads | $4,788,000 |
| Continue construction of Stage 2 channel | 100,000 |
| Engineering and design | 834,000 |
| Supervision and administration | 278,000 |
| Total | $6,000,000 |

NON-FEDERAL COSTS: Local interests are required to furnish without cost to the United States all lands, easements, and rights-of-way required for construction and subsequent maintenance of the project; hold and save the United States free from damages due to construction; perform without cost to the United States necessary highway, highway bridge, and utility alterations required in connection with this project; maintain and operate the project after completion in accordance with regulations prescribed by the Secretary of the Army; and adequately inform all affected persons, at least annually, that the project will not provide complete flood protection. The investment is broken down as follows:

| | |
|---|---|
| Lands and Damages | $15,396,000 |
| Relocations | 5,704,000 |
| Total | $21,100,000 |

It is estimated that the average annual expenditure for operation, maintenance and replacements will total $54,600 (1 October 1985).

STATUS OF LOCAL COOPERATION: The city of Kansas City, Missouri, passed a resolution of intent on 23 February 1968 to provide the required assurances of local cooperation when requested, and on 9 December 1975, provided a resolution of intent to sponsor the channel project with or without upstream lakes. A Section 221 Agreement was signed by the city on 8 October 1979. Four bond proposals to help Kansas City, Missouri, finance acquisition of land and easements and to meet relocation and other costs associated with the sponsor's responsibility did not pass. As a result, the city negotiated for several years with a major landowner for donation of rights-of-way which would enable the city to finance its sponsor requirements. The city and the landowner reached an agreement in late 1982. The Section 221 Agreement was signed by the Kansas City District Engineer on 8 September 1983.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $141,000,000 is an increase of $13,000,000 over the latest estimate ($128,000,000) submitted to Congress. This change includes an increase of $3,316,000 for adjustments in the estimated inflation allowance through the construction period. Design changes for channel work resulted in an increase of $5,050,000. Receipt of bids, contract modifications, quantity overruns and refinement of estimate increased the estimate by $4,634,000.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: A final Environmental Impact Statement was filed with the President's Council on Environmental Quality on 8 September 1975.

The provisions of Section 404 of the Clean Water Act were met by State 401 Certification received 2 July 1981. A Public Notice with preliminary 404(b)(1) Evaluation was issued 22 June 1979, and a Section 404(b)(1) Evaluation Report was signed by the District Engineer on 4 June 1981. A coordinated effort by the Corps of Engineers and the Environmental Protection Agency to sample and test the Blue River Channel sediments resolved issues concerning proper disposal of PCB laden sediments.

OTHER INFORMATION: Opposition to the Blue River Lakes resulted in a restudy of the authorized project, which included four lakes and the channel. The lakes are classified inactive or deferred in accordance with the recommendations of that study.

Funds were appropriated to initiate preconstruction planning in FY 1973 and to initiate construction in FY 1979.

## HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

**Division:** Missouri River
**District:** Kansas City

**Project:** Blue River Channel, Kansas City, Missouri

| Item | Estimates Presented to Congress ($1,000) | | | | |
|---|---|---|---|---|---|
| | Original Baseline | Cumulative Change | Last | Incremental Changes | Current |
| Federal Cost | 86,100 | | 128,000 1/ | | 141,000 1/ |
| (Price Level) | (Oct 1977) | | | | |
| Reason for Change | | (41,900) 1/ | | (13,000) | |
| a. Price Escalation (Excludes Real Estate Escalation) | | 53,168 | | 3,316 | |
| b. Design Changes | | -9,117 | | 5,050 | |
| c. Additional Function Added Under General Authorization | | | | | |
| d. Authorized Modification | | | | | |
| e. Post-Contract Award and Other Estimating Adjustments | | -2,154 | | 4,634 | |
| f. Schedule Changes | | | | | |
| g. Sundry | | 3 | | | |
| h. Real Estate | | | | | |

1/ Includes an allowance for estimated inflation through the construction period.

4 FEB 1986

REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: LOCAL PROTECTION (FLOOD CONTROL)

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM | PROJECT COST ESTIMATE | TOTAL TO 30 SEP 19 85 | CURRENT FY 1986 | BUDGET FY 1987 | BALANCE TO COMPLETE AFTER FY 1987 |
|---|---|---|---|---|---|---|
| | (a) | (b) | (c) | (d) | (e) | (f) |
| 1 | RELOCATIONS | 13,902,000 | 30,000 | 2,720,000 | 4,788,000 | 6,364,000 |
| 2 | CHANNELS | 103,275,000 | 6,050,000 | 1,283,000 | 100,000 | 95,842,000 |
| 3 | LEVEES | 3,990,000 | | | | 3,990,000 |
| 4 | ENGINEERING AND DESIGN | 10,703,000 | 4,813,000 | 1,355,000 | 834,000 | 3,701,000 |
| 5 | SUPERVISION AND ADMINISTRATION | 9,130,000 | 779,000 | 218,000 | 278,000 | 7,855,000 |
| 6 | | | | | | |
| 7 | TOTAL APPLIED COST (Fed Funds Only) | 141,000,000 | 11,672,000 | 5,576,000 | 6,000,000 | 117,752,000 |
| 8 | Undistributed Cost - None | | | | | |
| 9 | TOTAL PROJECT COST (Fed Funds Only) | 141,000,000 | 11,672,000 | 5,576,000 | 6,000,000 | 117,752,000 |
| 10 | Pending Adjustments - None | | | | | |
| 11 | TOTAL COST (Fed Funds Only) | 141,000,000 | 11,672,000 | 5,576,000 | 6,000,000 | 117,752,000 |
| 12 | Undelivered Orders | | 76,000 | -76,000 | | |
| 13 | TOTAL OBLIGATIONS | | 11,748,000 | 5,500,000 | 6,000,000 | 117,752,000 |
| 14 | | | | | | |
| 15 | METHOD OF FINANCING | | | | | |
| 16 | FEDERAL FUNDS | | | | | |
| 17 | Allocations | | 11,748,000 | 5,500,000 | | |
| 18 | Unobligated Carryover from Prior Year | | | | | |
| 19 | Total Funds Available for Obligation | | | 5,500,000 | | |
| 20 | Appropriations Required | | | | 6,000,000 | 117,752,000 1/ |
| 21 | | | | | | |
| 22 | NON-FEDERAL COSTS | | | | | |
| 23 | Cash Contributions | | | | | |
| 24 | Other Costs | | | | | |
| 25 | Lands and Damages | 15,396,000 | 4,926,000 | | | 10,470,000 |
| 26 | Relocations | 5,704,000 | 1,939,000 | 17,000 | | 3,748,000 |
| 27 | Total Non-Federal Costs | 21,100,000 | 6,865,000 | 17,000 | | 14,218,000 |
| 28 | | | | | | |
| 29 | TOTAL PROJECT COSTS | | | | | |
| 30 | Federal (Corps) and Non-Federal Costs | 162,100,000 | 18,537,000 | 5,593,000 | 6,000,000 | 131,970,000 |
| 31 | | | | | | |
| 32 | 1/ Includes $51,900,000 unscheduled work for Stage 3. | | | | | |
| 33 | | | | | | |

| | | | |
|---|---|---|---|
| EFFECTIVE DATE<br>1 JAN 1986 | DIVISION MISSOURI RIVER<br>DISTRICT KANSAS CITY | REGION MISSOURI<br>BASIN MISSOURI-KANSAS CITY | PROJECT<br>BLUE RIVER CHANNEL, MISSOURI |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE.

4 FEB 1986

APPROPRIATION TITLE: Construction, General - Reservoirs (Flood Control)

PROJECT: Little Blue River Lakes, Missouri (Continuing)

LOCATION: The project is located in the Little Blue River Basin in Jackson County, Missouri. Longview Lake is located on the Little Blue River within the eastern city limits of Kansas City, Missouri, and the adjacent communities of Grandview and Lee's Summit. Blue Springs Lake is on the East Fork, Little Blue River, in Lee's Summit, with the lake extending upstream into the adjacent community of Blue Springs.

AUTHORIZATION: 1968 Flood Control Act

BENEFIT-COST RATIO: The remaining benefit - remaining cost ratio is 4.7 to 1 at 3 1/4 percent. The benefit-cost ratio for the fiscal year for which Congress appropriated initial land acquisition funds (FY 1970) was 1.8 to 1. The benefit-cost ratio was based on the project's fair share of system benefits in a system including two lakes and one local protection project. As the last added unit in this system, the benefit-cost ratio was 1.06 to 1.

| SUMMARIZED FINANCIAL DATA | | | Accumulated % of Est Fed. Cost |
|---|---|---|---|
| Estimated Total Appropriation Requirement | | $137,000,000 | |
| Future Non-Federal Reimbursement | $14,530,000 | | |
| Estimated Federal Cost (Ultimate) | | 122,470,000 | |
| Estimated non-Federal Cost | | 14,870,000 | |
| Reimbursement: | | | |
| Recreation Cost Sharing | 14,530,000 | | |
| Other (Recreation - Work-in-Kind) | 340,000 | | |
| Total Estimated Project Cost | | $137,340,000 | |
| Allocations to 30 September 1985 | | $124,488,000 | |
| Conference Allowance for FY 1986 | | 9,400,000 | |
| Allocation for FY 1986 | | 7,070,000 1/ | |
| Allocations to Date | | 131,558,000 | 96 |
| Allocation Requested for FY 1987 | | 3,800,000 | 99 |
| Scheduled Balance to Complete after FY 1987 | | 1,642,000 | |
| Unscheduled Balance to Complete after FY 1987 | | 0 | |

| STATUS: (1 January 1986) | PERCENT COMPLETE | COMPLETION SCHEDULE |
|---|---|---|
| Acquisition of Lake Area | 100 | |
| Relocations | 99 | Jun 1986 |
| Reservoir Clearing and Boundary Marking | 96 | Sep 1987 |
| Dams | | |
| Longview (Closure - Aug 1983) | 100 | |
| Blue Springs (Closure - Aug 1986) | 63 | Dec 1987 |
| Access Roads | 81 | Sep 1986 |
| Recreation | 67 | Dec 1987 |
| Administration Facilities | 49 | Sep 1986 |
| Entire Project | 92 | Dec 1987 |

1/ Reflects $1,505,000 reduction assigned as savings and slippage and $825,000 transfer from the project.

## PHYSICAL DATA

Dam:
- Type - Rolled Earthfill
- Blue Springs: Height above streambed - 78 feet
  Length - 2,500 feet
- Longview: Height above streambed - 120 feet
  Length - 1,900 feet

Outlet Works:
- Blue Springs - Concrete conduit with uncontrolled hooded drop inlet and gate for emergency releases
- Longview - Concrete conduit with uncontrolled hooded drop inlet and gates for low-flow and emergency releases

Spillways: Type - Uncontrolled limited service

Lands and Damages
- Blue Springs - 2,650 acres
- Longview - 4,800 acres
- Type - Predominantly agricultural with transition to commercial and residential development.
- Improvements - Typical farm units with some suburban residential.

| Lake Capacity | Acre-Feet | |
|---|---|---|
| | Blue Springs | Longview |
| Full pool | 26,600 | 46,900 |
| Flood control | 15,700 | 24,300 |
| Multipurpose | 10,600 | 20,600 |
| Recreation | (10,600) | (7,700) |
| Water Quality | — | (12,900) |
| Sedimentation | 300 | 2,000 |

| Relocations | |
|---|---|
| Roads | $17,883,000 |
| Utilities & Structures | $18,390,000 |

JUSTIFICATION: Blue Springs and Longview Lakes will control the runoff from 83 square miles. Flood stage at the Lake City gauge has been exceeded 52 times during the last 37 years. Of these occurrences, 16 exceeded flood stage by 6 feet or more. The maximum flood of record prior to channel modification occurred in 1961. It inundated 13,200 acres, of which one-half was cropland, and caused damages totaling $870,000. Two larger floods occurred in September 1977 and August 1982. The September 1977 flood would have caused flood damages of $25,000,000. However, that portion of the channel project already in place prevented $24,500,000 in damages. The August 1982 flood event exceeded any previously recorded event both prior to and subsequent to channel modifications and caused $1,624,000 in damages. The existing channel modification prevented additional damages of $112,433,000 from occurring. Damages of $653,000 could have been prevented if the two lakes had been in place. The flood plain area includes many residences, business establishments, an airport, three major industries, a Federal ammunition plant, and agricultural acreage. Much of the agricultural acreage is within the city limits of Kansas City and neighboring cities, and the entire basin is in the path of the expanding metropolitan developments. Five railroads cross the Little Blue River Valley; and the highway network in the valley includes five Federal routes and numerous state, county, and city crossings. Fortunately, the September 1961, September 1977, and August 1982 floods did relatively little damage at the Lake City Army Ammunition Plant, which is the most vulnerable, high-value installation in the basin. The latest flood, occurring in May-June 1984, caused $40,000 in flood damages; however, the channel modification prevented $2,311,000; and the partially completed Longview Lake prevented $613,000 of the $2,964,000 in flood damages that would have occurred without these projects in operation.

The lakes, in conjunction with the downstream Little Blue River Channel and levee project, will control floods up to a 100-year discharge, reduce the impact of greater floods, and provide Standard Project Flood protection to the Lake City area. The channel alone will control floods up to a 30-year discharge. The lakes are a vital element of the system in order to obtain 100-year protection.

The lakes will also provide a much needed water-oriented recreational facility within the Kansas City Standard Metropolitan Statistical Area. Jackson County is planning to incorporate land and water area at the lakes into the county park system. Extensive recreational development is proposed on these project lands, which include 1,172 acres acquired specifically for recreation. Recreational use is expected to be near maximum density for quality recreation soon after the projects are placed in operation.

The estimated average annual benefits, based on 1 October 1985 prices, are as follows:

| Breakdown of Benefits | Amount |
|---|---|
| Flood Control | $9,720,000 |
| Water Quality | 961,000 |
| Recreation | 1,418,000 |
| Fish and Wildlife | 360,000 |
| Total | $12,459,000 |

FISCAL YEAR 1987: The requested amount will be applied as follows:

| | |
|---|---|
| Continue construction of Blue Springs embankment, outlet works and spillway | $1,620,000 |
| Continue construction of recreation facilities | 1,552,000 |
| Complete condemnation settlements, reservoir clearing, and permanent operating equipment | 86,000 |
| Fiscal completion of Longview Dam | 120,000 |
| Engineering and design | 125,000 |
| Supervision and administration | 297,000 |
| Total | $3,800,000 |

NON-FEDERAL COSTS: Local interests are required to administer project land and water areas for recreation and fish and wildlife and to pay, contribute in kind, or repay with interest, which may be received through user fees, one-half the separable costs of recreation and fish and wildlife. This amount is currently estimated to be $14,870,000, of which $340,000 will be accomplished during construction by local interests. Local interests will bear all costs of operation, maintenance and replacements of recreation facilities. These costs currently are estimated to be $1,489,700 annually (1 October 1985).

STATUS OF LOCAL COOPERATION: Under leadership of the Jackson County Court, the voters of Jackson County in 1967 passed a bond issue to finance the local costs for recreation cost sharing and the county's park developments. The County Legislature approved the contract on 5 July 1974. The contract, including a draft lease agreement, was approved by the Secretary of the Army on 24 June 1976. A supplemental agreement, signed by Jackson County officials on 5 June 1978, revised the contract to include additional costs involved with raising the multipurpose elevation at Blue Springs Lake. This agreement was signed by the Secretary of the Army on 10 January 1979.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $137,000,000 is the same as the latest estimate ($137,000,000) submitted to Congress. There were offsetting adjustments within the project cost estimate. Increases of $183,000 were due to adjustments in the estimated inflation allowance through the construction period. Adjustment to reflect non-Federal recreation work-in-kind decreased the estimate $307,000. A net increase of $81,000 was due to design changes. Final costs, refinement in the estimate and reanalysis of remaining requirements resulted in a net increase of $33,000. Additional cultural resource mitigation increased the estimate $10,000.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The Longview and Blue Springs Lakes final Environmental Impact Statements were filed with the Council on Environmental Quality on 9 November 1971 and 17 February 1972, respectively.

Longview. The provisions of Section 404 of the Clean Water Act have been met by a preliminary Section 404(b)(1) Evaluation accompanying a Public Notice issued 6 December 1978, Certification by the State of Missouri on 10 October 1978, and a Finding of Fact including the Section 404(b)(1) Determinations and Findings on 2 January 1979.

Blue Springs. The provisions of Section 404 of the Clean Water Act have been met by nationwide permit as provided for in 33 CFR 320-329, published in the 19 July 1977 Federal Register, which authorized discharge of dredged or fill material into a stream which has a median flow of less than 5 cubic feet per second.

OTHER INFORMATION: Funds to initiate advance land acquisition, including preconstruction planning, were appropriated in FY 1970. Funds to initiate construction were appropriated in FY 1977.

## HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

**Division**: Missouri River
**District**: Kansas City

**Project**: Little Blue River Lakes, Missouri

| Item | Estimates Presented to Congress ($1,000) | | | | |
|---|---|---|---|---|---|
| | Original Baseline | Cumulative Changes | Last | Incremental Change | Current |
| Federal Cost<br>(Price Level) | 93,900<br>(Oct 1975) | | 137,000 1/ | | $137,000 2/ |
| Reason for Change | | (43,100) 1/ | | (0) 2/ | |
| a. Price Escalation (Excludes Real Estate Escalation) | | 42,608 | | 183 | |
| b. Design Changes | | 12,776 | | 81 | |
| c. Additional Function Added Under General Authorization | | | | | |
| d. Authorized Modification | | | | | |
| e. Post-Contract Award and Other Estimating Adjustments | | -19,710 | | 33 | |
| f. Schedule Changes | | | | | |
| g. Sundry | | 646 | | -297 | |
| h. Real Estate | | 6,780 | | | |

1/ Includes an allowance for estimated inflation through the construction period.

2/ Includes an increase of $183,000 for adjustments in the estimated inflation allowance through the construction period.

REPORTS CONTROL SYMBOL: DAEN-CWB-13

| | |
|---|---|
| APPROPRIATION TITLE: CONSTRUCTION GENERAL | CLASSIFICATION: RESERVOIRS (FLOOD CONTROL) |

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM (a) | PROJECT COST ESTIMATE (b) | TOTAL TO 30 SEP 19 85 (c) | CURRENT FY 1986 (d) | BUDGET FY 1987 (e) | BALANCE TO COMPLETE AFTER FY 1987 (f) |
|---|---|---|---|---|---|---|
| 1 | LANDS AND DAMAGES | 31,190,000 | 31,075,000 | 95,000 | 20,000 | |
| 2 | RELOCATIONS | 36,273,000 | 35,106,000 | 1,118,000 | | 49,000 |
| 3 | RESERVOIRS | 1,645,000 | 1,558,000 | 21,000 | 59,000 | 7,000 |
| 4 | DAMS | 33,382,000 | 28,389,000 | 2,356,000 | 1,740,000 | 897,000 |
| 5 | ROADS | 636,000 | 463,000 | 159,000 | | 14,000 |
| 6 | RECREATION FACILITIES | 12,631,000 | 8,204,000 | 2,111,000 | 1,727,000 | 589,000 |
| 7 | CULTURAL RESOURCE PRESERVATION | 545,000 | 525,000 | 20,000 | | |
| 8 | BUILDINGS, GROUNDS & UTILITIES | 876,000 | 262,000 | 585,000 | | 29,000 |
| 9 | PERMANENT OPERATING EQUIPMENT | 211,000 | 131,000 | 73,000 | 7,000 | |
| 10 | ENGINEERING AND DESIGN | 11,288,000 | 10,739,000 | 404,000 | 125,000 | 20,000 |
| 11 | SUPERVISION AND ADMINISTRATION | 8,663,000 | 7,308,000 | 1,021,000 | 297,000 | 37,000 |
| 12 | | | | | | |
| 13 | TOTAL APPLIED COST (Fed & Non-Fed) | 137,340,000 | 123,760,000 | 7,963,000 | 3,975,000 | 1,642,000 |
| 14 | Undistributed Cost - None | | | | | |
| 15 | TOTAL PROJECT COST (Fed & Non-Fed) | 137,340,000 | 123,760,000 | 7,963,000 | 3,975,000 | 1,642,000 |
| 16 | Pending Adjustments - None | | | | | |
| 17 | TOTAL COST (Fed & Non-Fed) | 137,340,000 | 123,760,000 | 7,963,000 | 3,975,000 | 1,642,000 |
| 18 | Undelivered Orders | | 732,000 | -732,000 | | |
| 19 | TOTAL OBLIGATIONS | | 124,492,000 | 7,231,000 | 3,975,000 | 1,642,000 |
| 20 | | | | | | |
| 21 | SUMMARY OF ESTIMATED COSTS | | | | | |
| 22 | Total Federal Costs | 137,000,000 | 123,745,000 | 7,813,000 | 3,800,000 | 1,642,000 |
| 23 | Total Non-Federal Work-in-Kind | 340,000 | 15,000 | 150,000 | 175,000 | |
| 24 | Total Federal & Non-Federal Costs | 137,340,000 | 123,760,000 | 7,963,000 | 3,975,000 | 1,642,000 |
| 25 | | | | | | |
| 26 | METHOD OF FINANCING | | | | | |
| 27 | FEDERAL FUNDS | | | | | |
| 28 | Allocations | | 124,488,000 | 7,070,000 1/ | | |
| 29 | Unobligated Carryover from Prior Year | | | 11,000 | | |
| 30 | Total Funds Available for Obligation | | | 7,081,000 | | |
| 31 | Appropriations Required | | | | 3,800,000 | 1,642,000 |
| 32 | | | | | | |
| 33 | 1/ Reflects $1,505,000 reduction assigned as savings and slippage and $825,000 transfer from the project. | | | | | |

| | | | |
|---|---|---|---|
| EFFECTIVE DATE<br>1 JAN 1986 | DIVISION MISSOURI RIVER<br>DISTRICT KANSAS CITY | REGION MISSOURI<br>BASIN MISSOURI-KANSAS CITY | PROJECT<br>LITTLE BLUE RIVER LAKES, MISSOURI |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986

APPROPRIATION TITLE: Construction, General - Reservoirs (Flood Control)

PROJECT: Long Branch Lake, Missouri (Continuing)

LOCATION: The project is located on the East Fork of the Little Chariton River in north-central Missouri about 1 mile west of Macon, in Macon County, Missouri.

AUTHORIZATION: 1965 Flood Control Act

BENEFIT-COST RATIO: The remaining benefit - remaining cost ratio is not applicable because the project is nearing completion. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1972) was 2.4 to 1. The benefit-cost ratio was based on the project's fair share of system benefits in a system including channel improvements. As the last added unit in this system, the benefit-cost ratio was 2.3 to 1.

| SUMMARIZED FINANCIAL DATA | | | Accumulated % of Est Fed. Cost |
|---|---|---|---|
| Estimated Total Appropriation Requirements | | $20,453,000 | |
| Future Non-Federal Reimbursement | $5,581,000 | | |
| Estimated Federal Cost (Ultimate) | | $14,872,000 | |
| Estimated Non-Federal Cost: | | 9,328,000 | |
| Reimbursement: | | | |
| Water Supply | 5,581,000 | | |
| Recreation | | | |
| Cash Contribution | 3,294,000 | | |
| Other - Work-in-kind | 453,000 | | |
| Total Estimated Project Cost | | $24,200,000 | |
| Allocations to 30 September 1985 | | $17,806,000 | |
| Conference Allowance for FY 1986 | | 0 | |
| Allocation for FY 1986 | | 0 | |
| Allocations to Date | | 17,806,000 | 87 |
| Allocation Requested for FY 1987 | | 500,000 | 90 |
| Scheduled Balance to Complete after FY 1987 | | 0 | |
| Unscheduled Balance to Complete after FY 1987 | | 2,147,000 | |

| STATUS: (1 January 1986) | PERCENT COMPLETE | COMPLETION SCHEDULE |
|---|---|---|
| Land Acquisition | 100 | |
| Relocations | 100 | |
| Reservoir Clearing and Boundary Marking | 100 | |
| Dams (Closure Nov 1976) | 100 | |
| Roads | 100 | |
| Recreation | 57 | Sep 1987 1/ |
| Administrative Facilities | 100 | |
| Entire Project | 97 | Sep 1987 1/ |

1/ Remaining recreation facilities are not scheduled pending future contributions by the State of Missouri.

Division: Missouri River District: Kansas City Region: Missouri

Long Branch Lake, Missouri

4 FEB 1986

## PHYSICAL DATA

Dam:
Type - Rolled earthfill
Height - 71 feet
Length - 3,800 feet

Reservoir Capacity:
Flood Control - 29,000 acre-feet
Multipurpose - 32,000 acre-feet
Water Supply - (24,400 acre-feet)
Water Quality - (7,600 acre-feet)
Sediment - 4,000 acre-feet
Total - 65,000 acre-feet

Spillway:
Type - Uncontrolled limited service

Lands and Damages:
Acres - 7,700
Type - Predominantly agriculture

Relocations:
Roads - $1,192,000
Utilities & Structures - $444,000

Outlet Works:
Type - Concrete conduit with uncontrolled hooded drop inlet and gates for low-flow control.

Capacity - 980 cubic feet per second (full pool)

JUSTIFICATION: The estimated average annual flood damage in the Little Chariton River basin amounts to approximately $897,000. Long Branch Lake controls the runoff from 109 square miles of drainage area. The project reduces flooding to 40,000 rural acres in the Little Chariton River basin. During the period 1966 thru 1976 a total of $3,048,000 in flood damages occurred. Since closure in 1976, the project has prevented $585,000 in damages.

The 32,000 acre-feet of multipurpose storage provides a dependable yield of 7.1 million gallons (21.8 acre-feet) per day for immediate and future water supply, 4.5 million gallons (13.8 acre-feet) per day for water quality control, and a lake surface of 2,430 acres for recreation. Of the water supply storage, the city of Macon, Missouri, has requested 5.3 million gallons per day (1.3 immediate and 4.0 future); and the State of Missouri has requested that 1.8 million gallons per day be reserved for future water supply needs. Leaching from coal deposits and abandoned strip mines downstream from the damsite is the source of sulfate and iron in the river. The quality of downstream flows has been improved by supplemental flows from the lake. The estimated average annual benefits, based on 1 October 1985 prices are as follows:

| Breakdown of Benefits | Amount |
|---|---|
| Flood Control | $329,000 |
| Water Supply | 1,497,000 |
| Water Quality | 583,000 |
| Recreation | 279,000 |
| Fish and Wildlife | 115,000 |
| Total | $2,803,000 |

FISCAL YEAR 1987: The requested amount will be applied as follows:

| | |
|---|---|
| Continue recreation facilities | $434,000 |
| Engineering and design and supervision and administration | 66,000 |
| Total | $500,000 |

NON-FEDERAL COSTS: Local interests are required to assume the cost allocated to water supply, in accordance with the Water Supply Act of 1958, P.L. 85-500. This cost is presently estimated at $5,581,000 for 24,000 acre-feet of storage. Local interests, in accordance with the Federal Water Project Recreation Act of 1965, P.L. 89-72, are also required to bear one-half of the separable costs of recreation and fish and wildlife. Based on 1 October 1985 prices, their portion is presently estimated at $3,747,000 for recreational development and $202,200 annually for operation, maintenance and replacement of facilities.

STATUS OF LOCAL COOPERATION: The city of Macon contracted with the United States on 15 June 1972 for water supply storage. The Missouri Water Resources Board, by resolution dated 21 November 1969, gave assurances for future water supply storage. A contract to cost share with the State of Missouri for all proposed recreational development was approved by the Secretary of the Army on 18 April 1980.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $20,453,000 is an increase of $101,000 over the latest estimate ($20,352,000) submitted to Congress. Price level adjustments increased costs $83,000. Minor estimating adjustments had a net increase of $18,000.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The final Environmental Impact Statement was filed with the Council on Environmental Quality 27 January 1972.

The provisions of Section 404 of the Clean Water Act for boat ramps in the Bloomington and Macon Public Use Areas were met by a preliminary Section 404(b)(1) Evaluation accompanying a Public Notice issued 6 August 1980, Certification by the State of Missouri on 28 August 1980, and the District Engineer's signature on the Section 404(b)(1) Evaluation Report 12 September 1980.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1968 and to initiate construction in FY 1972. The project is complete except for cost-shared recreational development.

## HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: Missouri River
District: Kansas City

Project: Long Branch Lake, Missouri

| Item | Original Baseline | Cumulative Changes | Last | Incremental Change | Current |
|---|---|---|---|---|---|
| | Estimates Presented to Congress ($1,000) | | | | |
| Federal Cost<br>(Price Level) | 10,100<br>(Jul 70) | | 20,352 1/ | | 20,453 1/ |
| Reason for Change | | (10,252) | | (101) | |
| a. Price Escalation (Excludes Real Estate Escalation) | | 6,181 | | 83 | |
| b. Design Changes | | 2,785 | | | |
| c. Additional Function Added Under General Authorization | | | | | |
| d. Authorized Modification | | | | | |
| e. Post-Contract Award and Other Estimating Adjustments | | 2,070 | | 18 | |
| f. Schedule Changes | | 164 | | | |
| g. Sundry | | -2,603 2/ | | | |
| h. Real Estate | | 1,655 | | | |

1/ Estimate not inflated due to non-Federal funding limitations.

2/ Reflects $3,100,000 decrease due to non-Federal financing changed from future reimbursement to cash contribution and work-in-kind.

4 FEB 1986

REPORTS CONTROL SYMBOL: DAEN-CWB-13

| | |
|---|---|
| APPROPRIATION TITLE: CONSTRUCTION GENERAL | CLASSIFICATION: RESERVOIRS (FLOOD CONTROL) |

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM (a) | PROJECT COST ESTIMATE (b) | TOTAL TO 30 SEP 19 85 (c) | CURRENT FY 19 86 (d) | BUDGET FY 19 87 (e) | BALANCE TO COMPLETE AFTER FY 19 87 (f) |
|---|---|---|---|---|---|---|
| 1 | LANDS AND DAMAGES | 3,787,000 | 3,787,000 | | | |
| 2 | RELOCATIONS | 1,636,000 | 1,636,000 | | | |
| 3 | RESERVOIR | 650,000 | 615,000 | | | 35,000 |
| 4 | DAM | 6,082,000 | 6,082,000 | | | |
| 5 | ROADS | 228,000 | 228,000 | | | |
| 6 | RECREATION FACILITIES | 6,245,000 | 1,439,000 | | 896,000 | 3,910,000 |
| 7 | CULTURAL RESOURCE PRESERVATION | 100,000 | 100,000 | | | |
| 8 | BUILDINGS, GROUNDS & UTILITIES | 837,000 | 837,000 | | | |
| 9 | PERMANENT OPERATING EQUIPMENT | 152,000 | 152,000 | | | |
| 10 | ENGINEERING AND DESIGN | 2,811,000 | 2,541,000 | 88,000 | 16,000 | 166,000 |
| 11 | SUPERVISION AND ADMINISTRATION | 1,672,000 | 1,331,000 | 22,000 | 83,000 | 236,000 |
| 12 | | | | | | |
| 13 | TOTAL APPLIED COST (Fed & Non-Fed) | 24,200,000 | 18,748,000 | 110,000 | 995,000 | 4,347,000 |
| 14 | Undistributed Cost - None | | | | | |
| 15 | TOTAL PROJECT COST (Fed & Non-Fed) | 24,200,000 | 18,748,000 | 110,000 | 995,000 | 4,347,000 |
| 16 | Pending Adjustments (Fed & Non-Fed) | | -64,000 | 64,000 | | |
| 17 | TOTAL COST (Fed & Non-Fed) | 24,200,000 | 18,684,000 | 174,000 | 995,000 | 4,347,000 |
| 18 | Undelivered Orders (Fed & Non-Fed) | | | | | |
| 19 | TOTAL OBLIGATIONS (Fed & Non-Fed) | | 18,684,000 | 174,000 | 995,000 | 4,347,000 |
| 20 | | | | | | |
| 21 | SUMMARY OF ESTIMATED COSTS | | | | | |
| 22 | TOTAL FEDERAL COSTS | 20,453,000 | 17,756,000 | 50,000 | 500,000 | 2,147,000 |
| 23 | TOTAL NON-FEDERAL CONTRIBUTIONS | 3,747,000 | 928,000 1/ | 124,000 | 439,000 | 2,200,000 |
| 24 | TOTAL FEDERAL & NON-FEDERAL COSTS | 24,200,000 | 18,684,000 | 174,000 | 939,000 | 4,347,000 |
| 25 | | | | | | |
| 26 | 1/ Excludes payment for interest during construction. | | | | | |
| 27 | | | | | | |
| 28 | | | | | | |
| 29 | | | | | | |
| 30 | | | | | | |
| 31 | | | | | | |
| 32 | | | | | | |
| 33 | | | | | | |

| | | | |
|---|---|---|---|
| EFFECTIVE DATE 1 JAN 1986 | DIVISION MISSOURI RIVER<br>DISTRICT KANSAS CITY | REGION MISSOURI<br>BASIN GRAND-CHARITON | PROJECT LONG BRANCH LAKE, MISSOURI |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986

REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: RESERVOIRS (FLOOD CONTROL)

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM (a) | PROJECT COST ESTIMATE (b) | TOTAL TO 30 SEP 19 85 (c) | CURRENT FY 1986 (d) | BUDGET FY 1987 (e) | BALANCE TO COMPLETE AFTER FY 1987 (f) |
|---|---|---|---|---|---|---|
| 1 | METHOD OF FINANCING | | | | | |
| 2 | FEDERAL FUNDS | | | | | |
| 3 | Allocations | | 17,806,000 | | | |
| 4 | Unobligated Carryover from Prior Year | | | 50,000 | | |
| 5 | Total Funds Available for Obligation | | | 50,000 | | |
| 6 | Appropriations Required | | | | 500,000 | 2,147,000 2/ |
| 7 | | | | | | |
| 8 | NON-FEDERAL CONTRIBUTIONS | | | | | |
| 9 | Contributions (Incl Cash & Work-in-Kind) | | 994,000 1/ | 497,000 | | |
| 10 | Unobligated Carryover from Prior Year | | | 66,000 | | |
| 11 | Total Funds Available for Obligation | | | 563,000 | | |
| 12 | Contributions Required | | | | 56,000 | 2,200,000 2/ |
| 13 | | | | | | |
| 14 | | | | | | |
| 15 | | | | | | |
| 16 | 1/ Excludes payment for interest during construction. | | | | | |
| 17 | | | | | | |
| 18 | 2/ Unscheduled work. | | | | | |
| 19 | | | | | | |
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| | | | |
|---|---|---|---|
| EFFECTIVE DATE<br>1 JAN 1986 | DIVISION MISSOURI RIVER<br>DISTRICT KANSAS CITY | REGION MISSOURI<br>BASIN GRAND-CHARITON | PROJECT LONG BRANCH LAKE, MISSOURI |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986

**APPROPRIATION TITLE:** Construction, General (Flood Control)

**PROJECT:** Missouri National Recreational River, Nebraska and South Dakota

**LOCATION:** The Missouri River between Gavins Point Dam and Ponca State Park, Nebraska. This includes Cedar and Dixon Counties in Nebraska, and Yankton, Clay, and Union Counties in South Dakota.

**AUTHORIZATION:** Section 707 of the National Parks and Recreation Act of 1978 and FY 1985 Supplemental Appropriation Act (Public Law 99-88).

**BENEFIT-COST RATIO:** The remaining benefit-remaining cost ratio is not available because monetary benefits have not been quantified.

| SUMMARIZED FINANCIAL DATA | | Accumulated % of Est Fed (Corps) Cost |
|---|---|---|
| Estimated Federal Cost | $21,000,000 1/ | |
| Estimated Non-Federal Cost | 2/ | |
| Total Estimated Project Cost | 2/ | |
| Allocation to 30 September 1985 | $ 621,000 | |
| Conference Allowance FY 1986 | 800,000 | |
| Potential Allocation for FY 1986 | 385,000 | |
| Potential Allocations to date | 1,006,000 | 5 |
| Allocation requested for FY 1987 | 1,000,000 | 10 |
| Scheduled Balance to Complete after FY 1987 | 18,994,000 | |
| Unscheduled Balance to Complete after FY 1987 | 0 | |

| STATUS: (1 January 1986) | PERCENT COMPLETE | COMPLETION SCHEDULE |
|---|---|---|
| Lands and Damages | 0 | Sep 1996 |
| Recreation Facilities | 0 | Sep 1996 |
| Bank Stabilization | 0 | Sep 1996 |
| Environmental Preservation | 0 | Sep 1996 |
| Entire Project | 3 | Sep 1996 |

1/ Limit of Federal appropriations.

2/ See non-Federal cost paragraph.

Division: Missouri River District: Omaha Region: Missouri

## PHYSICAL DATA

Length: 59 miles of uncontrolled river Area: Approximately 19,600 acres within the designated corridor

JUSTIFICATION: Designation as a Recreation River will preserve important values and will provide additional opportunities for river access and recreation use. The project will provide for 563,000 visitor days for general recreation annually and 187,000 visitor days for fish and wildlife recreation annually. Erosion control will also be provided to the extent it is supported by local interests and is compatible with recreational river status. The project reach is one of the few remaining reaches of the Missouri River that is essentially free of man-made structures and still offers an example of the dynamics of a free-flowing river in a relatively natural state. A consequence of its dynamic character, though, is that it is difficult to plan future development with certainty because planned development sites may be affected by erosion and sedimentation processes before plannned stabilization occurs.

FISCAL YEAR 1987: The requested amount will be applied as follows:

| | |
|---|---|
| Initiate Land Acquisition | 100,000 |
| Initiate Development | 750,000 |
| Engineering and Design | 90,000 |
| Supervision and Administration | 60,000 |
| Total | $ 1,000,000 |

NON-FEDERAL COSTS: As planning associated with the preparation of the supplement to the General Design Memorandum moves ahead, the specific outputs of the plan will become better defined. This is a prerequisite for applying appropriate cost sharing. The Corps is currently using the cost sharing formula agreed to by the Administration and Senate Majority Leadership for projects funded under P.L. 99-88. Non-Federal requirements will be 50 percent for recreation with local interests responsible for operation and maintenance. Fish and wildlife enhancement will be a Federal cost when the enhancement provides national benefits, including benefits to species that are identified by the National Marine Fisheries Service as of national economic importance, species that are subject to treaties or international convention to which the United States is a party, anadromous fish, or when such enhancement is designed to benefit species that have been listed as threatened or endangered by the Secretary of the Interior under terms of the Endangered Species Act, as amended. When benefits of enhancement do not qualify as national, 25 percent of the enhancement costs will be provided by non-Federal interests except when the benefits are limited to a single state in which case non-Federal interests will be required to contribute 33 1/3 percent. Prevention of erosion to Federal lands would be at Federal expense. Prevention of erosion to private lands would be 100 percent non-Federal. Prevention of erosion to lands purchased as part of the project will be based on the purpose for acquisition; for example, prevention of erosion on lands bought for recreational purposes would be 50 percent non-Federal with local interests responsible for operation and maintenance.

STATUS OF LOCAL COOPERATION: Local interests will be contacted as specific requirements are developed. Potential sponsors are Union, Clay and Yankton counties in South Dakota and the Lewis and Clark Natural Resource District in Nebraska.

COMPARISON OF FEDERAL COST ESTIMATE: The current Federal cost estimate of $21,000,000 is unchanged from the latest estimate submitted and is the ceiling amount provided by the project authorization. This estimate includes $100,000 to be appropriated to the Department of the Interior.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The final Environmental Impact Statement (EIS) was filed with the Environmental Protection Agency on 12 August 1980.

The provisions of Section 404 of the Clean Water Act are scheduled to be met on a site-by-site basis, by a Section 404(b) Evaluation, issuance of a Public Notice, Certification from the States of Nebraska or South Dakota, and a signing of the Section 404(b) Evaluation Report by the District Engineer.

OTHER INFORMATION: Funds to initiate planning were appropriated in FY 1980 and to initiate construction in FY 1985.

REPORTS CONTROL SYMBOL: DAEN-CWB-13

| | |
|---|---|
| APPROPRIATION TITLE: CONSTRUCTION GENERAL | CLASSIFICATION: LOCAL PROTECTION (FLOOD CONTROL) |

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM (a) | PROJECT COST ESTIMATE (b) | TOTAL TO 30 SEP 19 85 (c) | CURRENT FY 19 86 (d) | BUDGET FY 19 87 (e) | BALANCE TO COMPLETE AFTER FY 19 87 (f) |
|---|---|---|---|---|---|---|
| 1 | LANDS AND DAMAGES | 3,630,000 | 0 | 0 | 100,000 | 3,530,000 |
| 2 | | | | | | |
| 3 | RECREATION FACILITIES | 2,662,000 | 0 | 0 | 265,000 | 2,397,000 |
| 4 | | | | | | |
| 5 | BANK STABILIZATION | 11,895,000 | 0 | 0 | 485,000 | 11,410,000 |
| 6 | | | | | | |
| 7 | ENGINEERING AND DESIGN | 1,939,000 | 570,000 | 335,000 | 90,000 | 944,000 |
| 8 | | | | | | |
| 9 | SUPERVISION AND ADMINISTRATION | 874,000 | 31,000 | 70,000 | 60,000 | 713,000 |
| 10 | | | | | | |
| 11 | TOTAL APPLIED COSTS | | | | | |
| 12 | (FED. FUNDS) | 21,000,000 | 601,000 | 405,000 | 1,000,000 | 18,994,000 |
| 13 | Undistributed Costs-NONE | | | | | |
| 14 | TOTAL PROJECT COST | | | | | |
| 15 | (Fed. Funds) | 21,000,000 | 601,000 | 405,000 | 1,000,000 | 18,994,000 |
| 16 | Pending Adjustments-NONE | | | | | |
| 17 | TOTAL COST (Fed. Funds) | 21,000,000 | 601,000 | 405,000 | 1,000,000 | 18,994,000 |
| 18 | Undelivered Orders-NONE | | | | | |
| 19 | TOTAL OBLIGATIONS | | 601,000 | 405,000 | 1,000,000 | 18,994,000 |
| 20 | | | | | | |
| 21 | | | | | | |
| 22 | METHOD OF FINANCING | | | | | |
| 23 | FEDERAL FUNDS | | | | | |
| 24 | Allocations | | 621,000 | 385,000 | | |
| 25 | Unobligated Carryover from Prior Years | | | 20,000 | | |
| 26 | Total Funds Available for Obligation | | | 405,000 | | |
| 27 | Appropriations Required | | | | 1,000,000 | 18,994,000 |
| 28 | | | | | | |
| 29 | NON-FEDERAL 1/ | | | | | |
| 30 | | | | | | |
| 31 | 1/ See non-Federal paragraph on Justification Sheet. | | | | | |
| 32 | | | | | | |
| 33 | | | | | | |

| | | | |
|---|---|---|---|
| EFFECTIVE DATE<br>1 JAN 86 | DIVISION MISSOURI RIVER<br>DISTRICT OMAHA | REGION MISSOURI<br>BASIN MISSOURI-BIG SIOUX | PROJECT<br>MISSOURI NATIONAL RECREATIONAL RIVER, NE, SD |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986

APPROPRIATION TITLE: Construction, General - Reservoirs (Flood Control)

**PROJECT: Papillion Creek and Tributaries Lakes, Nebraska (Continuing)**

**LOCATION:** A system of four earthfill dams on tributaries of Papillion Creek in Douglas and Sarpy Counties, Nebraska

**AUTHORIZATION:** 1968 Flood Control Act

**BENEFIT-COST RATIO:** The remaining benefit - remaining cost ratio is 3.5 to 1 at 3-1/4 percent (Sites 18 and 20). The benefit-cost ratio for the fiscal year for which Congress appropriated land acquisition funds (FY 1971) was 1.8 to 1. That benefit-cost ratio was based on a 21 dam system functioning independently.

SUMMARIZED FINANCIAL DATA

| Estimated Total Appropriation Requirement | | $48,000,000 1/ | Accumulated % of Est. Fed. Cost |
|---|---|---|---|
| Future Non-Federal Reimbursement | $3,272,000 | | |
| Estimated Federal Cost (Ultimate) | | 44,728,000 | |
| Estimated Non-Federal Costs | | 3,501,000 | |
| Recreation: | | | |
| Reimbursement | 3,272,000 | | |
| Construction (In-Kind) | 229,000 | | |
| Total Estimated Project Cost | | $48,229,000 | |
| Allocations to 30 September 1985 | | $41,991,000 1/ | |
| Conference Allowance for FY 1986 | | 1,700,000 | |
| Allocation for FY 1986 | | 1,230,000 2/ | |
| Allocations to Date | | 43,221,000 | 91 |
| Allocation Requested for FY 1987 | | 2,000,000 | 95 |
| Scheduled Balance to Complete After FY 1987 | | 2,779,000 | |
| Unscheduled Balance to Complete After FY 1987 | | 0 | |

| STATUS: (1 January 1986) | PERCENT COMPLETE | COMPLETION SCHEDULE |
|---|---|---|
| Site 11 | 100 | Dec 1979 |
| 16 | 100 | Dec 1978 |
| 18 (Closure Jul 84) | | Sep 1988 |
| Land Acquisition | 100 | |
| Construction | 74 | |
| 20 (Closure Sept 82) | | Sep 1988 |
| Land Acquisition | 100 | |
| Construction | 70 | |
| Entire Project | 83 | Sep 1988 |

1/ Excludes $1,854,000 Planning costs applicable to inactive units.

2/ Reflects $470,000 reduction assigned as "Savings and Slippage."

Division: Missouri River District: Omaha Region: Missouri

4 FEB 1986

## PHYSICAL DATA

**Dams:**
Number: 4
Height: 53 ft to 59 ft
Length: 1,480 ft to 2,450 ft

**Relocations:**
Roads, Utilities and Structures $6,685,000

**Spillways:**
Remote-earth-seeded (4 dams)

**Lands and Damages:**
Acres: 4,254
Type: Predominantly agricultural with transition to urban.
Improvements: Farm Units

**Outlet Works:**
Drop inlet type with conduits varying from 3 ft to 5 ft in diameter.

| **Reservoir Capacity:** | (Total Project) |
|---|---|
| Multiple-Purpose | 11,540 acre-feet |
| Flood Control | 18,143 acre-feet |
| Total | 29,683 acre-feet |

**JUSTIFICATION:** The project, consisting of Sites 11, 16, 18, and 20, will provide urgently needed flood protection to the expanding metropolitan area of Omaha while materially aiding in meeting the requirements of water-based recreation and augmenting streamflows. The flood problem is severe under the present stage of urban development. Major floods occurred in the basin on 16 June 1964 and 6-7 September 1965. Seven lives were lost in the flood of June 1964; and damages estimated at $4,962,000 were sustained, mostly in urban areas. The flood of September 1965 caused an estimated $529,000 damages, again mostly urban. The project would reduce the flood damage potential by 44 percent. In the absence of the remaining project, potential average annual flood damages are estimated at $3,411,000 (1985 price levels). The plan for recreational development will support an annual visitation of 1,100,000 visitor days. The estimated average annual benefits, based on 1 October 1985 prices, are as follows:

| Breakdown of Annual Benefits | Total |
|---|---|
| Flood Control | $4,034,000 |
| Water Quality Control | 35,000 |
| Recreation, General | 2,253,000 |
| Recreation, Fish and Wildlife | 109,000 |
| Total | $6,431,000 |

**FISCAL YEAR 1987:** The budget request for FY 1987 will be applied to Sites 18 and 20 as follows:

| | |
|---|---|
| Reservoirs | |
| Continue revegetation activities at Sites 18 and 20 | $ 200,000 |
| Recreation Facilities | |
| Continue Recreation Facilities at Site 20 and initiate Recreation Facilities at Site 18 | 1,529,000 |
| Cultural Resource Preservation and Permanent Operating Equipment - Site 18 | 38,000 |
| Engineering and Design and Supervision and Administration | 233,000 |
| Total | $2,000,000 |

**NON-FEDERAL COSTS**: Local interests will be required to: (a) maintain the Papillion Creek channels downstream from the dam-sites free of obstructions and available to accommodate reservoir releases and uncontrolled flow; (b) esure that all new bridge construction and future modification of existing bridges, downstream from reservoirs of the proposed system, shall have hydraulic capacity acceptable to the Chief of Engineers; (c) provide guidance and leadership in preventing unwise and uneconomical future development of the flood plain areas by encouraging prudent use of floodproofing, land regulation planning, or other flood plain management techniques to reduce flood losses; (d) hold and save the United States free from all damages arising from water-rights claims resulting from the construction and operation of the reservoirs; (e) exercise, to the full extent of their legal capability, control against removal of streamflow made available for water quality control; and (f) in accordance with the Federal Water Project Recreation Act: (1) administer project land and water areas for recreation facilities; (2) pay, contribute in kind, or repay (which may be through user fees) with interest, one-half of the separable first cost of the project allocated to recreation facilities; and (3) bear all costs of operation, maintenance, and replacement of lands and facilities for recreation.

The estimated costs to local interests are as follows:

| | | |
|---|---|---|
| First Costs | | $3,501,000 |
| Reimbursable Costs | | (3,272,000) |
| Construction (In-Kind) | | (229,000) |
| Annual Recreation Facilities Costs | | |
| Operation and Maintenance | $421,000 | |
| Replacement | 100,000 | |
| Total OM&R | $521,000 | |

**STATUS OF LOCAL COOPERATION**: Contracts with the city of Omaha to sponsor recreational development on Sites 11 and 16 were approved by the Secretary of the Army on 8 June 1973 and 18 February 1972, respectively. On 16 March 1982, the Omaha City Council approved the recreation cost-sharing contract for Site 18. However, because of perceived pollution problems, the city of Omaha, by letters dated 30 November 1984 and 13 May 1985, stated the city's intention to delay responsibility as the local sponsor until the water quality issues are resolved. Mayor Boyle also requested that the Corps defer expenditure on recreation facilities and that the lake not be impounded until a solution is developed. Local interests are developing a plan for resolving the water quality problem at Site 18 which would divert effluent into an adjacent drainage basin. State and local interests are pursuing methods of financing the implementation of this plan. If local efforts are unsuccessful, a decision will be made during the first quarter of FY 1987 whether to enforce the contract and fill the pool or to reformulate the project. A contract with Papio Natural Resource District (NRD) to sponsor recreation on Site 20 was approved by the Secretary of the Army on 23 April 1974. Previous negotiations between Papio NRD and the State of Nebraska to be a cosponsor resulted in a verbal agreement to participate in cost-sharing for recreation development. In January 1985, Governor Kerry declined to fund the development. After a series of meetings between representatives of the Corps, the State, county, city, and Papio Natural Resources District (NRD) select committee, the full Papio NRD Board passed a resolution to sponsor a slightly revised recreation facility plan. The Omaha District is developing the necessary revisions to the Master Plan and construction is scheduled to begin in June 1986. Since the passing of the Flood Disaster Protection Act of 1973, PL 93-234, land use regulations in the flood plain have been put into effect. A channel improvement and maintenance program on the Papillion Creek Channels was initiated in 1968 by the Papio Watershed Advisory Board on behalf of Douglas and Sarpy Counties to aid in meeting the requirement for downstream maintenance. The Papio Natural Resources District, formed in 1972, has since taken over these responsibilities. To date, about $1,170,000 has been spent on 10.0 miles of channel improvement and $900,000 on maintenance.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $48,000,000 is an increase of $1,600,000 from the latest estimate ($46,400,000) presented to Congress. This change includes increases of $35,000 for adjustments in the estimated inflation allowance through the construction period; $1,077,000 for Site 20 recreation facilities costs changing from cash contributions to future reimbursement; $430,000 for land acquisition deficiency payments, Site 18; $156,000 for modifications and quantity overruns on the dam and road contract, Site 18; and $315,000 for reanalysis of requirements for engineering and design and supervision and administration for Sites 18, 20, and the Restudy. These increases are partially offset by reductions of $245,000 for a favorable bid on relocation of a county road, Site 18; $89,000 for estimated savings on refuse removal and sewage lagoons relocations, Site 20; $74,000 for documentation in lieu of preservation of cultural resource, Site 18; and $5,000 for miscellaneous estimating adjustments, Site 18.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH THE CLEAN WATER ACT: The final Environmental Impact Statement (EIS) was filed with the Council on Environmental Quality (CEQ) on 23 November 1971. A Supplemental Information Report, which discusses the impacts of construction on Dam 20, was filed with the Environmental Protection Agency (EPA) on 19 February 1982. The final supplemental EIS, which discusses the impacts of construction of Dam 18, was filed with EPA on 24 August 1982.

Sites 18 and 20 meet the provisions of Section 404 of the Clean Water Act as prescribed under the Nationwide Permit program stated in 33 CFR 320-329 published in the 19 July 1977 Federal Register, which authorized discharge of dredge or fill material into a stream which has median flow of less than 5 cubic feet per second. This determination was made on 28 October 1980.

OTHER INFORMATION: As authorized, the project consisted of a system of 21 dams for flood control, recreation, and water quality. Funds to initiate preconstruction planning were appropriated in FY 1970, for land acquisition in FY 1971, and for construction in FY 1972. Construction was initiated on Dam 16 in FY 1972, on Dam 11 in FY 1973, on Dam 20 in FY 1981, and on Dam 18 in FY 1983.

A dam at Site 17 was constructed by a private developer.

As a result of project reevaluations, Sites 1 through 9, 10, 12, 13, 14, 15, 19, and 21 have been reclassified inactive. In 1975, a Plan Evaluation Report was prepared and it recommended that a new site, designated 3A, near Bennington, Nebraska, be substituted for Sites 1 through 9. The Water Resources Development Act of 1976 conditionally authorized Phase I General Design Memorandum planning for Site 3A. A restudy of remaining flood problems in the Papillion Creek Basin was directed by the Appropriations Committees in the Reports on FY 1982 Appropriations. As a result of this action, the Plan Evaluation Report on proposed Site 3A was withdrawn on 17 February 1982. The restudy found that the only feasible unconstructed elements of the authorized plan are Dams 1, 2, and 3. These dams, however, do not comply with PL 89-72. The report on the restudy recommended a 50-year channel and UPRR bridge improvement between West Center Road and L Street with a recreation trail located within the right-of-way and a basin wide flood warning system. It also recommends deauthorizing the remaining unconstructed dams of the authorized plan. Total estimated cost of the recommended plan is $6,379,400 of which $5,136,200 would be Federal and $1,243,200 would be non-Federal under traditional cost sharing. The recommended plan is the NED Plan. The annual net benefits and benefit-cost ratio are $108,200 and 1.2, respectively. If the authorized plan is modified by Congress as recommended (deauthorizing the remaining unconstructed dams and including the recommended channel improvement plan), the benefit-cost ratio of the then modified plan would be 2.4. The draft report and EIS of the restudy was circulated by the District Engineer for public review and comment on 4 October 1984. The Reevaluation Report was approved by the Board of Engineers for Rivers and Harbors (BERH) on 30 October 1985, and the Chief of Engineers Report is currently being prepared.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

**Division:** Missouri River
**District:** Omaha

**Project:** Papillion Creek and Tributaries Lakes, Nebraska

| Item | Estimates Presented to Congress ($1,000)<br>Original Baseline (1) | Cumulative Changes (2) | Last (3) | Incremental Change (4) | Current (5) |
|---|---|---|---|---|---|
| Federal Cost<br>(Price Level) | 38,000<br>(Jul 70) | | 46,400 3/ | | 48,000 3/ 5/ |
| Reason for Change | | (8,400) 3/ | | (1,600) 5/ | |
| a. Price Escalation (Excludes Real Estate Escalation) | | 49,905 | | 35 | |
| b. Design Changes | | 20,450 | | | |
| c. Additional Function Added Under General Authorization | | 3,199 1/ | | 0 | |
| d. Authorized Modification | | 500 4/ | | | |
| e. Post-Contract Award and Other Estimating Adjustments | | -2,446 | | 1,135 | |
| f. Schedule Changes | | 0 | | 0 | |
| g. Sundry | | -80,984 2/ | | 0 | |
| h. Real Estate | | 17,776 | | 430 | |

1/ Includes $3,099,000 for replacing a section of 2-lane highway with 4-lane divided highway in accordance with PL 93-251.

2/ Reflects decrease due to reclassification of Sites 1 through 10, 12 through 15, 17, 19 and 21 to inactive.

3/ Includes an allowance for estimated inflation through the construction period.

4/ Reflects $500,000 for Appropriation Committees Restudy of Papillion Creek Basin and cancellation of the conditional authorization for Phase I GDM for proposed Site 3A.

5/ Includes $35,000 for adjustments in estimated inflation allowance through the construction period.

REPORTS CONTROL SYMBOL: DAEN-CWB-13

| | |
|---|---|
| APPROPRIATION TITLE: CONSTRUCTION GENERAL | CLASSIFICATION: RESERVOIRS (FLOOD CONTROL) |

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM (a) | PROJECT COST ESTIMATE (b) | TOTAL TO 30 SEP 19 85 (c) | CURRENT FY 19 86 (d) | BUDGET FY 19 87 (e) | BALANCE TO COMPLETE AFTER FY 19 87 (f) |
|---|---|---|---|---|---|---|
| 1 | LANDS AND DAMAGES | 18,274,000 | 17,227,000 | 734,000 | 0 | 313,000 |
| 2 | | | | | | |
| 3 | RELOCATIONS | 6,685,000 | 6,525,000 | 17,000 | 0 | 88,000 |
| 4 | | | | | | |
| 5 | RESERVOIRS | 2,531,000 | 2,056,000 | 275,000 | 200,000 | 0 |
| 6 | | | | | | |
| 7 | DAMS | 8,907,000 | 8,864,000 | 0 | 0 | 43,000 |
| 8 | | | | | | |
| 9 | ROADS | 296,0000 | 296,000 | | | |
| 10 | | | | | | |
| 11 | RECREATION FACILITIES | 5,086,000 | 1,434,000 | 27,000 | 1,529,000 | 2,096,000 |
| 12 | | | | | | |
| 13 | CULTURAL RESOURCE PRESERVATION | 20,000 | 0 | 0 | 20,000 | 0 |
| 14 | | | | | | |
| 15 | BUILDINGS, GROUNDS AND UTILITIES | 127,000 | 55,000 | 12,000 | 0 | 60,000 |
| 16 | | | | | | |
| 17 | PERMANENT OPERATING EQUIPMENT | 81,000 | 63,000 | 0 | 18,000 | 0 |
| 18 | | | | | | |
| 19 | ENGINEERING AND DESIGN | 4,535,000 | 4,154,000 | 152,000 | 135,000 | 94,000 |
| 20 | | | | | | |
| 21 | SUPERVISION AND ADMINISTRATION | 1,458,000 | 1,228,0000 | 47,000 | 98,000 | 85,000 |
| 22 | TOTAL APPLIED COST (FED. FUNDS & NON-FED. | | | | | |
| 23 | CONTRIB.) | 48,000,000 | 41,962,000 | 1,259,000 | 2,000,000 | 2,779,000 |
| 24 | Undistributed Costs - NONE | | | | | |
| 25 | TOTAL PROJECT COST (FED. FUNDS & | 48,000,000 | 41,962,000 | 1,259,000 | 2,000,000 | 2,779,000 |
| 26 | NON-FED. CONTRIB.) | | | | | |
| 27 | Pending Adjustments-NONE | | | | | |
| 28 | TOTAL COST (FED. FUNDS & NON-FED. | 48,000,000 | 41,962,000 | 1,259,000 | 2,000,000 | 2,779,000 |
| 29 | (CONTRIB.) | | | | | |
| 30 | TOTAL COST (FED. FUNDS ONLY) | 48,000,000 | 41,962,000 | 1,259,000 | 2,000,000 | 2,779,000 |
| 31 | Undelivered Orders | | +22,000 | -22,000 | | |
| 32 | TOTAL OBLIGATIONS | | 41,984,000 | 1,237,000 | 2,000,000 | 2,779,000 |
| 33 | | | | | | |

| | | | |
|---|---|---|---|
| EFFECTIVE DATE 1 JAN 86 | DIVISION MISSOURI RIVER<br>DISTRICT OMAHA | REGION MISSOURI<br>BASIN MIDDLE MISSOURI RIVER | PROJECT PAPILLION CREEK AND TRIBUTARIES LAKES, NEBRASKA |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986

REPORTS CONTROL SYMBOL:

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: RESERVOIRS (FLOOD CONTROL)

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM<br>(a) | PROJECT COST ESTIMATE<br>(b) | TOTAL TO 30 SEP 19 85<br>(c) | CURRENT FY 19 86<br>(d) | BUDGET FY 19 87<br>(e) | BALANCE TO COMPLETE AFTER FY 19 87<br>(f) |
|---|---|---|---|---|---|---|
| 1 | METHOD OF FINANCING | | | | | |
| 2 | FEDERAL FUNDS | | | | | |
| 3 | Allocations | | 41,991,000 1/ | 1,230,000 2/ | | |
| 4 | Unobligated Carryover | | | | | |
| 5 | From Prior Year | | | 7,000 | | |
| 6 | Total Funds Available for | | | | | |
| 7 | Obligations | | | 1,237,000 | | |
| 8 | Appropriation Required | | | | 2,000,000 | 2,779,000 |
| 9 | NON-FEDERAL COSTS | | | | | |
| 10 | Cash Contribution-NONE | | | | | |
| 11 | Other Costs | | | | | |
| 12 | Recreation | | | | | |
| 13 | Construction (In-Kind) | 229,000 | 229,000 | | | |
| 14 | TOTAL NON-FEDERAL COSTS | 229,000 | 229,000 | | | |
| 15 | TOTAL PROJECT COSTS | | | | | |
| 16 | Federal (Corps) Costs and | | | | | |
| 17 | Non-Federal Costs | 48,229,000 | 42,191,000 | 1,259,000 | 2,000,000 | 2,779,000 |
| 18 | | | | | | |
| 19 | | | | | | |
| 20 | 1/ Does not include $1,854,000 | | | | | |
| 21 | planning costs applicable to | | | | | |
| 22 | inactive units. | | | | | |
| 23 | | | | | | |
| 24 | 2/ Reflects $470,000 reduction | | | | | |
| 25 | assigned as "Savings and Savings" | | | | | |
| 26 | | | | | | |
| 27 | | | | | | |
| 28 | | | | | | |
| 29 | | | | | | |
| 30 | | | | | | |
| 31 | | | | | | |
| 32 | | | | | | |
| 33 | | | | | | |

| | | | |
|---|---|---|---|
| EFFECTIVE DATE<br>1 JAN 86 | DIVISION MISSOURI RIVER<br>DISTRICT OMAHA | REGION MISSOURI<br>BASIN MIDDLE MISSOURI RIVER | PROJECT<br>PAPILLION CREEK AND TRIBUTARIES LAKES, NEBRASKA |

FORM [illegible] 4 FEB 1986

**APPROPRIATION TITLE:** Construction, General - Multiple-Purpose Projects Including Power

**PROJECT: Harry S. Truman Dam and Reservoir, Missouri (Continuing)**

**LOCATION:** The damsite is located on the Osage River about 1-1/2 miles northwest of Warsaw, Benton County, Missouri. The reservoir extends upstream into Bates, Henry, Hickory, St. Clair, and Vernon Counties, Missouri.

**AUTHORIZATION:** 1954 and 1962 Flood Control Acts

**BENEFIT-COST RATIO:** The remaining benefit - remaining cost ratio is 1.13 to 1 at 3 percent. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1965) was 1.2 to 1. The benefit-cost ratio was based on the project's fair share of system benefits in a system including eight lakes and two local protection projects in the Osage-Marais des Cygnes basin as well as lakes and levees on the Missouri River main stem and other major tributaries. As the next added unit in the system, the benefit-cost ratio was 1.16 to 1.

| SUMMARIZED FINANCIAL DATA | | | Accumulated % of Est. Fed. Cost |
|---|---|---|---|
| Estimated Total Appropriation Requirements | | $550,000,000 | |
| Future Non-Federal Reimbursement | $133,717,000 | | |
| Estimated Federal Cost (Ultimate) | | 416,283,000 | |
| Estimated Non-Federal Cost | | 133,717,000 | |
| Reimbursement: Power | 133,717,000 | | |
| Other | 0 | | |
| Total Estimated Project Cost | | $550,000,000 | |
| Allocations to 30 September 1985 | | $521,490,000 | |
| Conference Allowance for FY 1986 | | 5,700,000 | |
| Allocation for FY 1986 | | 4,000,000 1/ | |
| Allocations to Date | | 525,490,000 | 96 |
| Allocation Requested for FY 1987 | | 2,500,000 | 96 |
| Scheduled Balance to Complete after FY 1987 | | 13,352,000 | |
| Unscheduled Balance to Complete after FY 1987 | | 8,658,000 | |

| STATUS: (1 January 1986) | PERCENT COMPLETE | COMPLETION SCHEDULE |
|---|---|---|
| Land Acquisition | 100 | |
| Relocations | 98 | Sep 1987 |
| Dam and Powerplant (Closure Jul 1977) | 94 | Sep 1989 |
| Recreation Facilities | 96 | Sep 1986 2/ |
| Power on Line | | |
| Unit No. 6 | | Dec 1979 |
| Unit No. 5 | | Dec 1981 |
| Unit No. 4 | | Feb 1982 |
| Unit No. 3 | | Jul 1982 |
| Unit No. 2 | | Aug 1982 |
| Unit No. 1 | | May 1982 |
| Buildings, Grounds & Utilities | 89 | Sep 1988 |
| Downstream Measures | 100 | |
| Entire Project | 96 | Sep 1989 2/ |

1/ Reflects $1,700,000 reduction assigned as savings and slippage.

2/ Remaining recreation facilities are not scheduled pending development of cost-sharing agreements with local interests for construction and non-Federal operation and maintenance, consistent with projects for which recreation facilities are being constructed under provisions of the Federal Water Project Recreation Act of 1965 (Public Law 89-72), as amended.

Division: Missouri River     District: Kansas City     Region: Missouri

4 FEB 1986

## PHYSICAL DATA

Dam:
Type - Rolled earthfill
Height - 96 feet (average)
Length - 5,000 feet

Power Installation:
Initial and Ultimate: 6 Units: Total 29,600 kW
Presently planned: 6 Units: Total 29,600 kW
Average Gross Head: 43 feet

Relocations:
Roads - 175 miles
$89,711,000
Railroads - 14 miles
M-K-T $16,524,000
Other $1,178,000
Cemeteries, Utilities &
Structures $37,956,000

Lands and Damages: Acres - 268,900
Type - Predominantly agricultural
Improvements - Typical farm units
Towns and Cities $11,905,000
Mines and Resorts $7,887,000

Reservoir Capacity:
Flood Control - 3,918,000 acre-feet
Multipurpose - 1,040,000 acre-feet 1/
Sedimentation - 244,000 acre-feet
Full Pool - 5,202,000 acre-feet

Spillway:
Type - Gated overfall

1/ For power, recreation, fish and wildlife, and low-flow supplementation.

JUSTIFICATION: The Harry S. Truman Dam and Reservoir is the largest unit of the authorized eight-lake system in the Osage basin. It controls the runoff from more than 5 million acres of uncontrolled drainage area downstream from the other seven authorized lakes. The July 1951 flood alone caused estimated damages of $17,363,000 below the damsite on the lower Osage and Missouri Rivers. The floods of 1958, 1961, 1962, 1967, 1969, 1970, 1973, 1974, 1975, and 1984 caused total estimated damages of about $76,425,000 in the same area. Recurrence of these floods at 1985 prices would cause aggregate damages estimated at $235,000,000.

The Harry S. Truman Dam and Reservoir is the most important unit for control of floods in these areas. In addition, the multipurpose pool provides for the generation of hydroelectric power. The installed power facilities are capable of generating 160,000 kilowatts. Because operation of the pumped storage feature produces unacceptable fish kills, and techniques are not currently available to overcome the fish kills, the pumping feature is not being used. The project without pumping has a dependable capacity of 29,600 kilowatts and will produce average annual energy of 242,200,000 kilowatt-hours. In addition, Harry S. Truman Dam and Reservoir increases the capability of a private power project about 90 miles downstream. Recreation and fish and wildlife benefits are also provided by the multipurpose pool and project lands.

The estimated average annual benefits, based on 1 October 1985 prices, are as follows:

| Breakdown of Average Annual Benefits | Amount |
|---|---|
| Flood Control | $16,420,000 |
| Power | 12,000,000 1/ |
| Recreation | 5,129,000 |
| Fish and Wildlife | 891,000 |
| Total | $34,440,000 |

1/ The decline in power benefits from the $30,000,000 previously reported to the current $12,000,000 results from the reduced power operation (reduced capacity from 160,000 kW to 29,600 kW, reduced average annual energy from 305.6 GWh to 242.2 GWh) recommended in the Report on the Future Direction of Hydropower.

FISCAL YEAR 1987: The requested amount will be applied as follows:

| | |
|---|---|
| Construct outlet channel erosion protection | $276,000 |
| Continue construction of miscellaneous power plant items | 212,000 |
| Continue miscellaneous expenses for land condemnation settlements, distributive costs and minor items | 533,000 |
| Continue relocation of municipal facilities | 667,000 |
| Engineering and design | 512,000 |
| Supervision and administration | 300,000 |
| Total | $2,500,000 |

NON-FEDERAL COSTS: Costs allocated to power are reimbursable. The construction cost allocated to power is estimated at $133,717,000 through updating the original cost allocation. A change in the allocated costs is likely. The Corps of Engineers and the Southwestern Power Administration, Department of Energy, are working toward resolution of a new cost allocation. Costs allocated to annual operation, maintenance and replacement (OM&R) of the power facilities are estimated at $2,004,000 (1 October 1985).

STATUS OF LOCAL COOPERATION: None required for currently scheduled construction. Cost-sharing agreements with local interests for construction and non-Federal operation and maintenance will be required for the remaining unscheduled recreation facilities consistent with projects for which recreation facilities are being constructed under provision of the Federal Water Project Recreation Act of 1965 (Public Law 89-72), as amended. Responsibility for repayment of power rests with the marketing agency of the Department of Energy, the Southwestern Power Administration (SWPA).

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $550,000,000 is an increase of $6,000,000 over the latest estimate submitted to Congress. This change includes increases of $360,000 for adjustments in the estimated inflation allowance through the construction period. Design changes for dam, powerplant, recreation, and buildings, grounds and utilities increased costs $5,370,000. Refinement of land requirements and values increased costs $78,000. Costs increased $922,000 based on other estimating adjustments. Reduction in scope of design studies and reports decreased the engineering and design feature $730,000.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The final Environmental Impact Statement (EIS) was filed with the Council on Environmental Quality (CEQ) on 28 February 1973. The Supplement to the final EIS was filed with CEQ on 21 September 1973. An Appendix to the Supplement, which contained certain court exhibits, was filed with CEQ on 10 December 1973. The final supplement concerning downstream measures was filed with the Environmental Protection Agency (EPA) 28 November 1980.

The provisions of Section 404 of the Clean Water Act for the project were met by a Section 404 Evaluation Report signed by the District Engineer on 27 January 1977. The provisions of Section 404 of the Clean Water Act for the downstream measures were met with the submission of an EIS supplement, including a Section 404(b)(1) Evaluation, to Congress on 28 August 1981. Funds for the downstream measures were included in the appropriation act (P.L. 97-88) dated 4 December 1981.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1959. Funds for advance relocation of Missouri State Highway 13 were appropriated in FY 1962 and for the initial construction of the dam and reservoir in FY 1965.

The first power unit was placed on line 22 December 1979. Subsequent problems with the turbine bearings necessitated remedial design on the bearings. Restricted commercial power production with the first unit (Unit 6) became available in August 1981. Subsequent to mechanically successful pumpback tests on 13 and 14 April, Units 4 and 5 were declared commercially operable by SWPA on 1 May 1982. All six units have successfully generated power, but two units at a time were out of service for repairs and modifications in late 1983 and early 1984. No other units have been declared commercially operable.

During pumping tests of the power units in April 1982, fish were drawn into the units and killed. Because of the potential for continued fish kills, the Kansas City District Engineer made a public commitment to do no more pumping until a solution to the problem is found. A series of pump sampling tests which were necessary to gather data to evaluate the feasibility of various alternatives were terminated in November 1984. Test results led to a decision of no commercial pumping unless fish protection technology advances to the point where it is biologically and economically feasible.

The power facilities will continue to be operated in a manner consistent with the commitment of the Chief of Engineers to the Missouri Congressional delegation. That commitment is to work toward full power generation in gradual phases with careful evaluation of impacts between each phase and to operate the power facilities at an appropriately low output until the downstream concerns are satisfactorily resolved. In support of the commitment, the Governor of Missouri and the Missouri River Division Engineer jointly established a Truman Project Coordination Team to improve communication among the many interests potentially affected by power operations at Harry S. Truman Dam and Reservoir. This team met for the first time on 9 August 1983. Outgrowths of the Coordination Team activity to date are an agreement by the State in December 1983 that generation from the power pool and monitoring with up to four power units could commence, and support for initiating controlled pumping operations in an attempt to further evaluate potential fish protection systems. After the initial pump sampling in July 1984, members of the Coordination Team identified an unacceptable short-term impact of pump sampling. At its 9 August 1984 meeting, the team discussed loss of tourism at the Lake of the Ozarks resulting from media reports of fish loss during pump sampling. The issue was resolved in the team's support for the District Engineer's proposal to proceed with sampling, but to postpone the next sampling period until after the peak recreation season. After sampling in September 1984, the data gathered, together with input from the power marketing agency, led to the conclusion that structural fish protection alternatives are not viable in the near future.

The present hydropower benefit is based on project operation without pumping and with up to four units generating from the power pool, or six units from the flood pool. That hydropower benefit is adversely impacted by the decision for no near-term commercial pumping. Studies of modifications to the power operation to maximize the benefits and revenues from the hydropower project were recently completed. These studies indicate that most of those alternatives are not feasible. The study report discusses the impacts on the power benefits, benefit-cost ratio, and the reimbursable costs for hydropower caused by changing from the operation including pumping to the current operation without pumping and with generation from the power pool restricted to four units. Coordination with the Southwestern Power Administration is underway to resolve differing approaches to allocating costs. Efforts will continue to identify downstream impacts for up to a six-unit power operation. These efforts will be in coordination with the Truman Project Coordination Team, which includes representatives from all interests.

Between 1974 and 1980, a plan to offset the adverse effects of the design power operation on the nearby community of Warsaw was developed and coordinated with elected officials of Warsaw. Measures recommended in 1980 within the authority of the Chief of Engineers are complete.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: Missouri River

Project: Harry S. Truman Dam and Reservoir, Missouri

District: Kansas City

| Item | Estimates Presented to Congress ($1,000) | | | | |
|---|---|---|---|---|---|
| | Original Baseline | Cumulative Change | Last | Incremental Changes | Current |
| Federal Cost<br>(Price Level) | 146,200<br>(Jul 1963) | | 544,000 1/ | | 550,000 1/ 2/ |
| Reason for Change | | (397,800) 1/ | | (6,000) 2/ | |
| a. Price Escalation (Excludes Real Estate Escalation) | | 115,462 | | 545 | |
| b. Design Changes | | 76,406 | | 4,640 3/ | |
| c. Additional Function Added Under General Authorization | | | | | |
| d. Authorized Modification | | 7,500 | | | |
| e. Post-Contract Award and Other Estimating Adjustments | | 60,418 | | 1,000 4/ | |
| f. Schedule Changes | | 67,033 | | | |
| g. Sundry | | 7,070 | | | |
| h. Real Estate | | 63,911 | | -185 | |

1/ Includes an allowance for estimated inflation through the construction period.

2/ Includes net increase of $360,000 for adjustments in the estimated inflation allowance through the construction period.

3/ Includes increase of $5,370,000 for design changes and $642,000 increase for associated E&D and decrease of $1,372,000 in estimated cost of required design studies and reports.

4/ Reflects net increase of $922,000 based on completion of work and reanalysis of work remaining; and an increase of $78,000 for refinement of land requirements and values.

REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: MULTIPLE-PURPOSE PROJECT INCLUDING POWER

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM | PROJECT COST ESTIMATE | TOTAL TO 30 SEP 19 85 | CURRENT FY 19 86 | BUDGET FY 19 87 | BALANCE TO COMPLETE AFTER FY 19 87 |
|---|---|---|---|---|---|---|
|  | (a) | (b) | (c) | (d) | (e) | (f) |
| 1 | LANDS AND DAMAGES | 117,273,000 | 115,524,000 | 683,000 | 114,000 | 952,000 |
| 2 | RELOCATIONS | 145,369,000 | 142,513,000 | 842,000 | 667,000 | 1,347,000 |
| 3 | RESERVOIR | 17,771,000 | 17,544,000 | 152,000 | 31,000 | 44,000 |
| 4 | DAM | 52,839,000 | 50,669,000 | 209,000 | 541,000 | 1,420,000 |
| 5 | FISH AND WILDLIFE FACILITIES | 517,000 | 517,000 |  |  |  |
| 6 | POWER PLANT | 103,344,000 | 96,849,000 | 238,000 | 175,000 | 6,082,000 |
| 7 | ROADS | 1,679,000 | 1,677,000 |  |  | 2,000 |
| 8 | CHANNELS | 182,000 | 165,000 |  |  | 17,000 |
| 9 | LEVEES | 2,703,000 | 2,082,000 | 65,000 | 28,000 | 528,000 |
| 10 | RECREATION FACILITIES | 41,145,000 | 31,924,000 | 1,322,000 |  | 7,899,000 |
| 11 | CULTURAL RESOURCE PRESERVATION | 2,417,000 | 2,416,000 |  |  | 1,000 |
| 12 | BUILDINGS, GROUNDS & UTILITIES | 4,782,000 | 4,233,000 | 20,000 |  | 529,000 |
| 13 | PERMANENT OPERATING EQUIPMENT | 1,648,000 | 1,353,000 | 5,000 | 132,000 | 158,000 |
| 14 | ENGINEERING AND DESIGN | 35,754,000 | 33,477,000 | 596,000 | 512,000 | 1,169,000 |
| 15 | SUPERVISION AND ADMINISTRATION | 25,210,000 | 22,911,000 | 383,000 | 300,000 | 1,616,000 |
| 16 |  |  |  |  |  |  |
| 17 | TOTAL APPLIED COST (Fed Funds Only) | 552,633,000 | 523,854,000 | 4,515,000 | 2,500,000 | 21,764,000 |
| 18 | Undistributed Cost |  | -215,000 |  |  | 215,000 |
| 19 | TOTAL PROJECT COST (Fed Funds Only) | 552,633,000 | 523,639,000 | 4,515,000 | 2,500,000 | 21,979,000 |
| 20 | Pending Adjustments |  |  |  |  |  |
| 21 | Income and Credits to Oper. - Rehab |  | -10,000 |  |  | 10,000 |
| 22 | Transfers of Cost or Property - Other | -2,633,000 | -2,654,000 |  |  | 21,000 |
| 23 | TOTAL COST (Fed Funds Only) | 550,000,000 | 520,975,000 | 4,515,000 | 2,500,000 | 22,010,000 |
| 24 | Undelivered Orders |  | 515,000 | -515,000 |  |  |
| 25 | TOTAL OBLIGATIONS |  | 521,490,000 | 4,000,000 | 2,500,000 | 22,010,000 |
| 26 |  |  |  |  |  |  |
| 27 |  |  |  |  |  |  |
| 28 |  |  |  |  |  |  |
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| | | | |
|---|---|---|---|
| EFFECTIVE DATE<br>1 JAN 1986 | DIVISION MISSOURI RIVER<br>DISTRICT KANSAS CITY | REGION MISSOURI<br>BASIN OSAGE-GASCONADE | PROJECT HARRY S. TRUMAN DAM AND RESERVOIR, MISSOURI |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986

REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: MULTIPLE-PURPOSE PROJECT INCLUDING POWER

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM (a) | PROJECT COST ESTIMATE (b) | TOTAL TO 30 SEP 19 85 (c) | CURRENT FY 19 86 (d) | BUDGET FY 19 87 (e) | BALANCE TO COMPLETE AFTER FY 19 87 (f) |
|---|---|---|---|---|---|---|
| 1 | METHOD OF FINANCING | | | | | |
| 2 | FEDERAL FUNDS | | | | | |
| 3 | Allocations | | 521,490,000 | 4,000,000 1/ | | |
| 4 | Unobligated Carryover from Prior Year | | | | | |
| 5 | Total Funds Available for Obligation | | | | | |
| 6 | Appropriations Required | | | | 2,500,000 | 22,010,000 2/ |
| 7 | | | | | | |
| 8 | | | | | | |
| 9 | | | | | | |
| 10 | 1/ Reflects $1,700,000 reduction assigned as savings and slippage. | | | | | |
| 11 | | | | | | |
| 12 | 2/ Includes $8,658,000 for recreation facilities which are not scheduled pending | | | | | |
| 13 | development of cost-sharing agreements with local interests for construction | | | | | |
| 14 | and non-Federal operation and maintenance, consistent with projects for which | | | | | |
| 15 | recreation facilities are being constructed under provisions of the Federal | | | | | |
| 16 | Water Project Recreation Act of 1965 (Public Law 89-72), as amended. | | | | | |
| 17 | | | | | | |
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|---|---|---|---|
| EFFECTIVE DATE 1 JAN 1986 | DIVISION MISSOURI RIVER<br>DISTRICT KANSAS CITY | REGION MISSOURI<br>BASIN OSAGE-GASCONADE | PROJECT HARRY S. TRUMAN DAM AND RESERVOIR, MISSOURI |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE.

4 FEB 1986

## MISSOURI RIVER DIVISION
## JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

1. Navigation

a. Channels and Harbors

The program request of $8,928,000 provides for maintenance of bank stabilization and channel alignment structures on the Missouri River between Sioux City, Iowa, and the mouth. A stable bank is necessary to prevent erosion of valuable farmlands and provide a secure alignment for flood control levees along the banks as well as provide a navigable channel.

OBLIGATIONS

| Project | Actual FY 1985<br>$ | Estimated FY 1986<br>$ | Estimated FY 1987<br>$ | Explanation of Major Changes |
|---|---|---|---|---|
| Iowa | | | | |
| Missouri River, Sioux City, Iowa to the Mouth | 9,050,700 | 9,620,000 | 8,928,000 | |
| TOTAL - Channels and Harbors | 9,050,700 | 9,620,000 | 8,928,000 | |
| Locks and Dams NONE | | | | |
| TOTAL - NAVIGATION | 9,050,700 | 9,620,000 | 8,928,000 | |

## MISSOURI RIVER DIVISION
## JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

### 2. Flood Control

a. Reservoirs

The program request of $23,392,000 includes funds for the operation and maintenance of 24 flood control projects, including essential repair work and scheduling of flood control reservoir operations within the Division. The estimates also include application of Special Recreation Use Fees for recreation areas and recreation facilities at completed projects. Annual requirements are for operation and ordinary maintenance of project facilities; labor, supplies, materials and parts for day-by-day functioning of projects; periodic maintenance, repairs and replacements; cultural resource needs; and contract law enforcement.

| | OBLIGATIONS | | | |
|---|---|---|---|---|
| Project | Actual FY 1985 | Estimated FY 1986 | Estimated FY 1987 | Explanation of Major Changes |
| | $ | $ | $ | |
| **Colorado** | | | | |
| Bear Creek Lake | 255,700 | 266,000 | 319,000 | Convert reservoir operating system computer model to operational status and increased instrument maintenance in FY 87. |
| Chatfield Lake | 624,800 | 1,031,000 | 1,077,000 | Seismic Studies in FY 86. Correction of ponding problem downstream of Spring Gulch embankment in FY 87. |
| Cherry Creek Lake | 374,300 | 893,000 | 733,000 | Clearing and rehab of trash racks in FY 86. Recreation cost sharing in FY 86 and FY 87. |
| **Iowa** | | | | |
| Rathbun Lake | 2,541,300 | 1,626,000 | 1,212,000 | Resurface roads, relocate recreation facilities, and modify administration building in FY 85. Renovate relief wells and construct central shower building in FY 86. |

## MISSOURI RIVER DIVISION
## JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

2. Flood Control (Cont'd)

a. Reservoirs (Cont'd)

| | OBLIGATIONS | | | |
|---|---|---|---|---|
| Project | Actual FY 1985 | Estimated FY 1986 | Estimated FY 1987 | Explanation of Major Changes |
| | $ | $ | $ | |
| **Kansas** | | | | |
| Clinton Lake | 1,104,900 | 1,237,000 | 1,198,000 | Install trilateration in FY 86. |
| Hillsdale Lake | 585,600 | 577,000 | 581,000 | |
| Kanopolis Lake | 1,452,300 | 1,605,000 | 1,670,000 | Construct administration building in FY 86. |
| Melvern Lake | 1,532,000 | 1,280,000 | 1,187,000 | Raise breakwater in FY 85. |
| Milford Lake | 1,396,400 | 1,264,000 | 1,784,000 | Replace and renovate relief wells in FY 87. |
| Perry Lake | 2,363,000 | 2,193,000 | 1,284,000 | Renovate Slough Creek Public Use Area in FY 85. Replace relief wells, paint control gates, replace anodes and construct breakwater in FY 86. |
| Pomona Lake | 1,038,300 | 993,000 | 1,088,000 | |
| Tuttle Creek Lake | 1,476,700 | 1,337,000 | 2,990,000 | Boundary rectification and replace spillway bridge deck in FY 87. |

## MISSOURI RIVER DIVISION
## JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

2. Flood Control (Cont'd)

a. Reservoirs (Cont'd)

| | OBLIGATIONS | | | |
|---|---|---|---|---|
| Project | Actual FY 1985 | Estimated FY 1986 | Estimated FY 1987 | Explanation of Major Changes |
| | $ | $ | $ | |
| Kansas (Cont'd) | | | | |
| Wilson Lake | 1,109,900 | 1,431,000 | 1,707,000 | Renovate Minooka Public Use Area in FY 86 and 87 and construct central shower building in FY 87. |
| Missouri | | | | |
| Long Branch Lake | 567,900 | 507,000 | 718,000 | Install dam instrumentation (piezometers) and service bridge pier repair in FY 85. Purchase rock for riprap in FY 87. |
| Little Blue River Lakes | 0 | 0 | 254,000 | First year operational. |
| Pomme de Terre Lake | 1,429,500 | 1,458,000 | 1,400,000 | |
| Smithville Lake | 879,000 | 920,000 | 726,000 | Install dam instrumentation (piezometers), conduct seepage study and install relief wells in FY 85; install trilateration and land acquisition in FY 86. |
| Nebraska | | | | |
| Harlan County Lake | 1,246,400 | 1,275,000 | 1,053,000 | Rehabilitate embankment piezometers and periodic inspection in FY 85. Replace stilling basin piezometers and repair retention dikes in FY 86. |

## MISSOURI RIVER DIVISION
## JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

2. Flood Control (Cont'd)

a. Reservoirs (Cont'd)

| | OBLIGATIONS | | | |
|---|---|---|---|---|
| Project | Actual FY 1985 | Estimated FY 1986 | Estimated FY 1987 | Explanation of Major Changes |
| | $ | $ | $ | |
| Nebraska (Cont'd) | | | | |
| Papillion Creek & Tributaries Lakes | 305,900 | 345,000 | 421,000 | Increase in data collection for periodic inspections and dam instrumentation at sites 18 and 20 in FY 87. |
| Salt Creek & Tributaries Lakes | 536,400 | 499,000 | 526,000 | |
| North Dakota | | | | |
| Bowman-Haley Lake | 168,600 | 155,000 | 406,000 | Construct low level water intake in FY 87. |
| Pipestem Lake | 345,200 | 357,000 | 326,000 | |

## MISSOURI RIVER DIVISION
## JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

2. Flood Control (Cont'd)

a. Reservoirs (Cont'd)

| Project | OBLIGATIONS<br>Actual FY 1985 | <br>Estimated FY 1986 | <br>Estimated FY 1987 | Explanation of Major Changes |
|---|---|---|---|---|
| | $ | $ | $ | |
| **South Dakota** | | | | |
| Cold Brook Lake | 140,400 | 189,000 | 140,000 | Repair roads and drill new water wells in FY 86. |
| Cottonwood Springs Lake | 111,600 | 147,000 | 119,000 | Rehabilitate water system, repair fencing and roads in FY 86. |
| Scheduling of Flood Control Reservoir Operations | 442,400 | 476,000 | 473,000 | |
| TOTAL - Reservoirs | 22,028,500 | 22,061,000 | 23,392,000 | |

b. Channel Improvements, Inspections and Miscellaneous Maintenance

The program request of $766,000 provides for the annual maintenance on one local flood protection project and the inspection of completed works within the Division during the budget year.

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

2. Flood Control (Cont'd)

b. Channel Improvements, Inspections and Miscellaneous Maintenance (Cont'd)

| Project | OBLIGATIONS<br>Actual FY 1985 | <br>Estimated FY 1986 | <br>Estimated FY 1987 | Explanation of Major Changes |
|---|---|---|---|---|
| | $ | $ | $ | |
| Nebraska | | | | |
| Missouri River, Kenslers Bend, NE to Sioux City, IA | 36,200 | 45,000 | 50,000 | Increased structure repairs in FY 86 and 87. |
| Inspection of Completed Works | 548,900 | 649,000 | 526,000 | Reconnaissance report Missouri River Levee System Unit L624 in FY 86. |
| Inspection of Non-Federal Levees | 197,000 | 194,000 | 190,000 | |
| Project Periodically Maintained | 163,700 | 436,000 | | |
| TOTAL - Channel Improvements, Inspections & Misc Maintenance | 945,800 | 1,324,000 | 766,000 | |
| TOTAL - FLOOD CONTROL | 22,974,300 | 23,385,000 | 24,158,000 | |

### RECOGNITION OF MRS. SMITH

Mr. **Bevill**. Thank you very much, General. A fine presentation. The Chair recognizes Mr. Myers.

Mr. **Myers**. Mr. Chairman, I will yield my time to Mrs. Smith whose Congressional district lies within this area.

Mr. **Bevill**. The Chair recognizes Mrs. Smith.

Mrs. **Smith**. Thank you, Mr. Myers and Mr. Chairman.

Welcome, General Dominy and all of you.

I think, Mr. Chairman, I have established the fact that General Dominy comes from my part of Nebraska, and we are particularly appreciative of the great job he does.

### PLATTE RIVER FLOOD FORECAST

I think the first question that my folks would want me to ask again is what are the prospects for flooding on the Platte River across Nebraska this year?

General **Dominy**. Mrs. Smith, we reviewed the 1 February status of the snow pack in the range that affects the Platte River. On the South Platte section, it appears to be about 110 percent of normal; on the North Platte region, about 115 percent of normal. That's not alarming.

The seven Bureau of Reclamation lakes on the North Platte currently have about 272,000 acre-feet less in storage than they had at this time last year. So they have some capacity to absorb water. We do not anticipate flooding problems, barring a dramatic snowfall in the spring or one of those fast melting rain and snow combinations. We would forecast at this time a year similar to '85.

Mrs. **Smith**. Well, my folks will be glad to hear about that.

### TECHNICAL AND ENGINEERING ASSISTANCE ON SHORE AND STREAMBANK EROSION

Now, staying with the Platte for a minute, would you comment about your Section 55 work with respect to the 46-mile stretch between Hershey eastward to the Lincoln County line, and when do you expect to have it completed and will you be using all of the $500,000?

General **Dominy**. We are continuing to work very hard with your Twin Platte Natural Resources District there and Mr. Kent Miller.

The Omaha District anticipates being able to provide a completed package to the NRD on the 15th of September this year. That will include results of aerial reconnaissance, results of erosion rate calculations, and most importantly, some generic plans and specifications that may be of use to the local interests when they are combating bank stabilization problems.

Mrs. **Smith**. Let me tell you that I get very supportive and enthusiastic questions and comments as I go out in the area about what you are doing and about the progress report along the way. There is a lot of interest and a lot of appreciation.

## REPUBLICAN RIVER HARLAN COUNTY DAM TO MILFORD LAKE, NEBRASKA AND KANSAS

Now, turning down to the Republican River, would you just provide for the record a detailed account of what you are doing on that reach between Milford Lake and the Harlan County Dam under Section 14, 205, 55, the snagging and clearing authority and on Section 22, and let me comment that I deplore the outcome of the failure of the partnership between the Corps and the NRD.

I think you know that the people's choice is simply to go ahead and dredge out the sediment and the trees clogging the Republican River. I have crossed that river in that area many times, and I know just what they are talking about.

But they continue to question the fact that you are saying that spraying that vegetation is not economically feasible.

My question is have you really had memos with the EPA on it, and has there been an exchange of correspondence and a study of this issue?

General DOMINY. Let me focus on that, Mrs. Smith, because we have undertaken a very important study effort in that region.

As you know, we completed the reconnaissance report in December '85. We shared the results of the reconnaissance report with Mr. Ron Wunibald and the folks in the lower Republican NRD.

The results of the reconnaissance report indicate that the potential projects that could address the flooding they are experiencing would be a four-unit levee or a combination of a levee and some offsite detention lakes. The cost of these options varies between $4 million for the levees and up to $17 million for some of these offsite tributary lakes.

When negotiating with the NRD about continuing with a feasibility study, we discussed the 50-50 cost-sharing that would be required. The NRD balanced the potential costs against the benefits that would be derived from protecting the agricultural land.

The projects in question were very marginal in terms of a favorable benefit-cost ratio. Coupling that with the additional cost of a feasibility study, on January 9th, the NRD elected not to continue with the study and indicated that they would focus on that reach of the river between the Guide Rock diversion to the State line on their own.

Mrs. SMITH. Two miles?

General DOMINY. Yes, that would be two miles.

We will provide the NRD the results of our reconnaissance study which has information on the costs and potential benefits obtained from removing the islands and clearing out the vegetation that exists in that reach. It is an expensive proposition to clear it out to an extent where it will have a positive hydraulic impact in terms of reducing floods.

Mrs. SMITH. And you are going to give them all the information you have about that because they are going into this not knowing very much about what the cost is or what the impact is except what you can provide them.

General DOMINY. Yes, we plan to give them all the detailed information we have derived to this point in time.

## CONTINUING AUTHORITY PROJECTS

Mrs. SMITH. Now, going to something else.

In a report to me by the Kansas City District, I note a long list of projects in Nebraska undertaken through your continuing authority. And let me say that those are very much appreciated in Nebraska.

Will such a current list also be available in the Omaha area?

General DOMINY. Yes, we maintain a current list of all our continuing authorities projects. I might add that it is a rather lengthy one for our region. We have one of the most active Section 14 programs in the Nation.

Mrs. SMITH. We appreciate that very much, and I hope you will submit a complete list for the record.

General DOMINY. Yes, I will be glad to provide that for the record.

[The information follows:]

# MISSOURI RIVER DIVISION

## CONTINUING AUTHORITY PROGRAM

### Section 14
### 1946 Flood Control Act

Projects in Missouri - Kansas City District:

1. West Fork, Grand River, Worth County (Protect county road and bridge) - Construction was completed in February 1985.

2. Nodaway River, Andrew County (Protect county road and bridge) - Construction was completed in December 1985.

3. Osage River, Miller County (Protect county road) - Construction began in January 1986 and is scheduled to be completed in March 1986.

4. Kimsey Creek, Holt County (protect county road and bridge) - The project has been approved and construction is scheduled to begin in June 1986 and be completed in approximately one month.

5. Nodaway River, Holt & Andrew Counties (Protect county road and bridge) - The project has been approved and construction is scheduled to begin in June 1986 and be completed in approximately one month.

6. Andrew County - various drainages (Protect county roads and bridges) - The appraisal reports for four separate projects are scheduled to be submitted in the fourth quarter of FY 1986.

7. Greggs Creek, Glasgow, Missouri (Protect sewage lift station and city park road) - Appraisal report is scheduled for submittal in June 1986.

8. Chariton River, Schuyler County (Protect county road and bridge) - Appraisal report is scheduled for submittal in March 1986.

Projects in Kansas - Kansas City District:

1. Marais des Cygnes, Quenemo (Protect city sewage lagoon) - Construction was completed in April 1985.

2. South Fork, Wolf River, Brown County (Protect county road and bridge) - Construction was completed in September 1985.

3. Smoky Hill River, Sand Springs Road, Dickinson County (Protect county road) - Appraisal was terminated. County road was not considered in imminent danger of failure.

4. Smoky Hill River, Lindsborg Mill, McPherson County (Protect historical mill) - Appraisal was terminated. Damage to mill was not due to erosion.

5. Little Blue River, Marshall County (Protect county road) - Appraisal report was submitted in July 1985.

6. Big Blue River, Maryville (Protect city water supply dam) - Appraisal study was terminated after notification that the city had repaired the erosion damage.

7. Wakarusa River, Baldwin City (Protect city waterline) - Appraisal report is scheduled for submittal in February 1986.

8. Wakarusa River, Douglas County (Protect county road and bridge) - Appraisal report is scheduled for submittal in March 1986.

9. Tributary of Kill Creek, DeSoto (Protect city sewage treatment plant) - Appraisal report is scheduled for submittal in March 1986.

10. Marais des Cygnes, Osawatomie (Protect water intake wells) - Appraisal report is scheduled for submittal in August 1986.

Projects in Nebraska - Kansas City District:

1. Little Blue River, Clay County (Protect four county bridges) - Construction was completed in December 1984.

2. North Fork, Big Nemaha River, Elk Creek (Protect city sewage lagoons) - Construction was completed in September 1985.

3. Little Blue River, Gilead Bridge, Thayer County (Protect county road and bridge) - Construction was completed in September 1985.

4. South Fork, Big Nemaha River, DuBois Bridge, Pawnee County (Protect county bridge) - Construction was completed in May 1985.

5. Webster County (Protect county road and bridges) - Appraisal reports were submitted for the original nine sites in the third quarter of FY 1985. Three of the projects were terminated due to the bridges not being in imminent danger of failure. One other project was terminated when the local sponsor withdrew support for the project. The five remaining projects were approved in February 1986 and construction of those projects is scheduled for completion in August 1986.

6. South Fork, Big Nemaha River, State Highway 8 bridge, Richardson County (Protect state bridge) - Project was terminated. The bridge was not in imminent danger of failure.

7. Johnson County (Protect county roads and bridges) - Projects were approved in September 1985 for two of the three sites. The remaining study was terminated because a project was not economically justified. Construction completion for the two approved projects is scheduled for June 1986.

8. Big Blue River, Crete (Protect city bridge) - Project was approved in February 1986. Construction is scheduled for completion in July 1986.

9. Turkey Creek, Fillmore County (Protect four county bridges) - Appraisal reports were submitted in fourth quarter of FY 1985. Two studies have been terminated.

10. Little Blue River, Adams County (Protect county bridges) - Appraisal reports for two of the sites have been submitted. The remaining two appraisal studies are scheduled for completion in March and May 1986, respectively.

11. Little Blue River, Clay, Thayer, & Nuckolls Counties (Protect three county bridges) - Appraisal reports for the three sites are scheduled to be submitted in the third quarter of FY 1986.

12. South Fork, Big Nemaha River, Richardson County (Protect county bridge) - Appraisal study was terminated because project was not economically justified.

Projects in Nebraska - Omaha District:

1. Logan Creek, Bancroft (Protect Doht bridge) - Appraisal report is scheduled for completion in second quarter of FY 1986.

2. Wigle Creek, Homer (Protect county road) - Project was approved in August 1985. Construction is underway and scheduled for completion in June 1986.

## MISSOURI RIVER DIVISION
## JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

### 3. Multiple Purpose Power Projects

The program request of $42,926,000 provides for the operation and maintenance of 8 multiple-purpose projects. The estimated amounts also include application of Special Recreation Use Fees for recreation areas and recreation at completed projects. Annual requirements are for the necessary operation and ordinary maintenance of project facilities; labor, supplies, materials and parts required for the day-by-day functioning of the projects; periodic maintenance, repairs and replacements; cultural resource needs; and contract law enforcement.

OBLIGATIONS

| Project | Actual FY 1985 | Estimated FY 1986 | Estimated FY 1987 | Explanation of Major Changes |
|---|---|---|---|---|
| | $ | $ | $ | |
| **Missouri** | | | | |
| Harry S. Truman Dam and Reservoir | 4,802.800 | 4,943,000 | 5,646,000 | Paint intake gates, bulkheads, and trashracks in FY 87. |
| Stockton Lake | 1.820.200 | 1,818,000 | 2,121,000 | Boundary surveys and marking downstream of Caplinger Mills in FY 87. |
| **Montana** | | | | |
| Fort Peck Lake | 4,269.300 | 3,707,000 | 1,817,000 | Rehab spillway storm drain, replace crest road lighting, sewage system improvements in powerhouse and downstream area, rehab electrical distribution system, and modernize administration bldg in FY 85. Surveys and platting of townsites, rehab electrical distribution and control equipment at spillway and intake areas, and paint spillway gates in FY 86. |

# MISSOURI RIVER DIVISION
# JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

3. Multiple Purpose Power Projects (Cont'd)

| Project | OBLIGATIONS<br>Actual<br>FY 1985<br>$ | <br>Estimated<br>FY 1986<br>$ | <br>Estimated<br>FY 1987<br>$ | Explanation of Major Changes |
|---|---|---|---|---|
| **Nebraska** | | | | |
| Gavins Point Dam - Lewis & Clark Lake | 3,584,600 | 4,258,000 | 6,106,000 | Powerplant controller system in FY 86. Generator rewind and construct heavy equipment storage building in FY 86 and FY 87. Replace powerplant HVAC and recreation cost sharing in FY 87. |
| **North Dakota** | | | | |
| Garrison Dam-Lake Sakakawea | 9,105,700 | 7,029,000 | 9,451,000 | Replace generator windings in FY 85. Repair powerplant and intake structure roofs, replace voltage regulators, maintenance garage and equipment storage building, turbine corrective work, relief and replacement and boundary rectification in FY 87. |
| **South Dakota** | | | | |
| Big Bend Dam-Lake Sharpe | 3,364,000 | 3,621,000 | 3,892,000 | |

## MISSOURI RIVER DIVISION
## JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

3. Multiple Purpose Power Projects (Cont'd)

| | OBLIGATIONS | | | |
|---|---|---|---|---|
| Project | Actual FY 1985 | Estimated FY 1986 | Estimated FY 1987 | Explanation of Major Changes |
| | $ | $ | $ | |
| Fort Randall Dam-Lake Francis Case | 5,645.400 | 6,607,000 | 6,346,000 | Townsite platting, renovate townsite electrical distbution system, protective coating PP#3, renovate powerplant HVAC and upstream embankment repair in FY 86. |
| Oahe Dam-Lake Oahe | 8,080,200 | 7,989,000 | 7,547,000 | |
| TOTAL - MULTIPLE PURPOSE PROJECTS | 40.672.200 | 39,972,000 | 42,926,000 | |

## MISSOURI RIVER DIVISION
## JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

### 4. Protection of Navigation

The program request of $3,387,000 provides for accomplishing the work essential to the administration and enforcement of specific laws enacted for the protection of navigation, particularly Section 10, River and Harbor Act, 1899, and Section 402 and 404 of FWPCA Amendment of 1972 involving the issuance and review of permits for discharges into navigable waters.

OBLIGATIONS

| Project | Actual FY 1985 | Estimated FY 1986 | Estimated FY 1987 | Explanation of Major Changes |
|---|---|---|---|---|
| | $ | $ | $ | |
| General Regulatory Functions | 3,977,600 | 4,023,000 | 3,387,000 | Denver water supply EIS in FY 85 and FY 86. |
| TOTAL - PROTECTION OF NAVIGATION | 3,977,600 | 4,023,000 | 3,387,000 | |
| GRAND TOTAL - MISSOURI RIVER DIVISION | 76,674,800 | 77,000,000 | 79,399,000 | |

3. Elk Creek, Jackson (Protect county bridge) - Project was approved in March 1985. Construction is scheduled for completion in June 1986.

4. Salt Creek, Lancaster County, Nebraska (Protect bridge, box culvert, and county road) - Appraisal reports scheduled for completion in the second quarter of FY 1986.

5. Salt Creek, Lincoln (Protect city sewage treatment plant) - Construction was completed in September 1985.

6. South Creek, Martinsburg (Protect two county bridges) - Appraisal reports are scheduled for completion in second quarter of FY 1986.

7. Pebble Creek, Snyder (Protect city sewage treatment plant) - Construction was completed in March 1985.

8. Muddy Creek, Syracuse (Protect county road and culvert) - Construction was completed in October 1984.

9. Elk Creek, Willis (Protect county road) - Appraisal report was submitted in January 1986.

10. Platte River, Ashland (Protect Camp Ashland Training Facilities) - Appraisal report was submitted in January 1986.

11. Niobrara River, Bassett (Protect bridge) - Appraisal report is scheduled for completion in second quarter of FY 1986.

12. Blackbird Creek, Burt County (Protect county road and bridge) - Appraisal report was approved in October 1985.

13. Elm Creek, Decatur (Protect city bridge) - Construction was completed in June 1985.

14. Elm Creek, Decatur (Protect U.S. Highway 75 bridge) - Appraisal report was submitted in December 1985.

15. West Papillion Creek, Douglas County (Protect county road) - Project was approved in July 1985. Construction is scheduled for completion in April 1986.

16. Platte River, Sarpy County (Protect county road) - Construction is underway and is scheduled for completion in February 1986.

17. Platte River, Brady (Protect city sewage lagoon) - Construction was completed in July 1985.

18. Redbird Creek, Holt County (Protect county bridge) - Project was approved in August 1985. Construction is scheduled for completion in May 1986.

Projects in Colorado Omaha District

1. South Platte River, Balzac (Protect county bridge) - Project was approved in July 1985. Construction is scheduled for completion in June 1986.

2. South Platte River, Ft. Lupton (Protect U.S. Highway 85) - Appraisal report is scheduled for completion in the second quarter of FY 1986.

3. South Platte River, Goodrich (Protect county bridge) - Project was approved in July 1985. Construction is scheduled for completion in June 1986.

4. South Platte River, Iliff (Protect county road) - Construction was completed in September 1985.

5. Big Thompson River, Johnstown (Protect county bridge) - Construction was completed in September 1985.

6. South Platte River, Kersey (Protect county road) - Construction was completed in September 1985.

7. South Platte River, Merino (Protect county road) - Construction was completed in October 1985.

8. South Platte River, Morgan County (Protect State Highway 144 bridge) - Project was approved in October 1985. Construction is scheduled for completion in June 1986.

9. South Platte River, Platteville (Protect bridge and county road) - Construction was completed in August 1985.

10. South Platte River, Weldona (Protect county bridge) - Project was approved in September 1985. Construction is scheduled for completion in June 1986.

11. Cache La Poudre River, Windsor (Protect county road and bridge) - Construction was completed in September 1985.

Projects in Iowa - Omaha District:

1. Big Sioux River, Plymouth County (Protect county road) - Construction is underway and scheduled for completion in March 1986.

2. Big Sioux River, Plymouth County (Protect county road) - Appraisal report was approved in September 1985.

Projects in North Dakota - Omaha District:

1. Knife River, Stanton (Protect county road and bridge) - Appraisal report was submitted in December 1985.

Projects in Montana - Omaha District:

1. Yellowstone River, Glendive (Protect county levee) - Construction was completed in August 1985.

Projects in South Dakota - Omaha District:

1. Big Sioux River, Harrisburg (Protect county road) - Appraisal report was submitted in January 1986.

2. Big Sioux River, Harrisburg (Protect wellhouse and wellfield) - Appraisal report was submitted in February 1986.

3. Vermillion River, Vermillion (Protect wastewater treatment plant) - Project was approved in September 1985. Construction is scheduled for completion in June 1986.

4. Vermillion River, Vermillion (Protect city sewerline) - Construction is underway and is scheduled for completion in April 1986.

5. Marne Creek, Yankton (Protect city sewage treatment plant) - Appraisal report was approved in December 1985.

## Section 205
## 1948 FLOOD CONTROL ACT, AS AMENDED

Projects in Missouri - Kansas City District:

1. Pleasant Hill - Appraisal report, completed in August 1984, concluded that a feasible project to reduce flood damage might be possible and recommended further study. The reconnaissance study began in November 1984 and is scheduled for completion in March 1986.

2. Mound City - Appraisal report, completed in October 1984, concluded that a feasible project to reduce flood damage might be possible and recommended further study. The reconnaissance study began in February 1985 and is scheduled for completion in May 1986.

Projects in Kansas - Kansas City District:

1. Rossville - A Detailed Project Study of local flood protection measures began in April 1984 and completion is scheduled for April 1986. The most effective plan will probably include a combination of channel relocation with levees north and west of the town.

2. Hays - This study was transferred to the Section 205 program from the Kansas and Osage Rivers, Kansas Study. A Detailed Project Study began in February 1985 and is scheduled for completion in July 1986. The selected plan will probably combine several detention dams and diversion structures.

3. Ellis - Appraisal report recommending no Federal action was completed in March 1985.

4. Ogden - Appraisal report recommending no Federal action was completed in September 1985.

5. Fairway - Appraisal study is scheduled for completion in March 1986.

6. Mission - Appraisal study is scheduled to begin in July 1986 with completion scheduled for September 1986.

Projects in Nebraska - Kansas City District:

1. Crete - Appraisal study is scheduled to begin in late Spring 1986 with completion scheduled for late Summer 1986.

2. DeWitt - Appraisal study is scheduled to begin in late Spring 1986 with completion scheduled for late Summer 1986.

3. Deshler - Appraisal study is scheduled to begin in late Spring 1986 with completion scheduled for late Summer 1986.

Projects in Iowa - Kansas City District

1. Bedford - Appraisal study is scheduled for completion in April 1986.

Projectsin Nebraska - Omaha District:

1. Howells - Appraisal study is underway and scheduled for completion in March 1986.

2. Lindsay - Appraisal study is underway and scheduled for completion in March 1986.

3. Scribner - Detailed Project Study, completed in May 1985, recommended a 100-year levee for construction. Plans and specifications are scheduled for completion in August 1986.

4. Cedar Creek - Appraisal report completed in March 1985, concluded that more detailed study was warranted. Reconnaissance study, begun in July 1985, is scheduled for completion in July 1986.

5. Columbus - Project construction was initiated in August 1983 and is approximately 85 percent complete. Construction is scheduled to be completed in August 1986. The channel project will provide protection from the 100-year flood.

6. Bellevue - Appraisal study is scheduled to begin in March 1986 with completion scheduled for May 1986.

7. Sidney - Detailed Project Study, initiated in February 1981, and is scheduled for completion in April 1986. The plan tentatively selected for recommendation is a 100-year channel levee combination along Lodgepole Creek and Deadwood Draw.

Projects in Iowa - Omaha District:

1. Emerson - Project construction was completed in February 1986. The levee and appurtenant work project provides protection from the standard project flood.

Projects in Montana - Omaha District:

1. Twin Bridges - Appraisal report recommending further study was completed in December 1985.

Projects in Wyoming - Omaha District:

1. Casper - Appraisal study is scheduled for completion in March 1986.

Projects in North Dakota - Omaha District:

1. Bowman - Appraisal study is scheduled for completion in April 1986.

2. Max - Appraisal study is scheduled for completion in April 1986.

3. Mandan - Detailed Project Study is scheduled for completion in October 1986. Preliminary analysis indicates that modifications to the existing levee system are economically justified.

### SECTION 14 PROJECTS

Mrs. SMITH. Now, could the Army be engaging in more such activities under its continuing authority? In other words, are there needs and demands for more work in this area?

General DOMINY. Mrs. Smith, we are able to respond to every request we receive. We currently, for example, in 1985, completed 22 Section 14 projects at a cost of about $1.8 million. We project completing in Fiscal Year '86, another 35 Section 14 projects at a cost of $3.1 million.

I might add that 19 of those projects are in the State of Nebraska and we operate in a nine State area. Over 50 percent of our Section 14 projects are in the State of Nebraska responding to local needs.

We respond to all requests received and I anticipate we will be in a posture to continue that in the future.

Mrs. SMITH. Well, I am delighted to hear that. And we do have a lot of needs, and all you are doing is very, very much appreciated.

Now, just one more question. I do want to say, Mr. Chairman, I have some more questions to submit for the records, and also I have a question that Mr. Daub has submitted to me that I would like to submit for the record.

Mr. BEVILL. Without objection, so ordered.

[The questions and answers follow:]

Mrs. SMITH. With respect to prevention or reduction of flooding on the Platte, when will your restudy of old measures be finished in the Platte River Basin including Colorado and Wyoming as well as Nebraska?

General DOMINY. The reconniassance phase of the Platte River and Tributaries, Nebraska, Wyoming, and Colorado study is scheduled for completion in November 1986. The feasibility phase of the study is scheduled to be completed in September 1989.

Mrs. SMITH. Am I correct that the study will point strongly at solutions available mostly in the Denver metropolitan area?

General DOMINY. The reconnaissance phase of the Platte River and Tributaries study includes a review of problems and potential projects throughout the Platte River basin. Based on a preliminary review, the most likely areas where the feasibility phase could be undertaken is in the Denver Metropolitan area. If potentially feasible projects are identified in other areas and there is a sponsor willing to share in study costs, feasibility-phase studies would be initiated.

Mrs. SMITH. If these measures in the Denver area were taken, what assurance would Nebraskans have that normal flows would not be interfered with?

General DOMINY. Potential projects that are being considered in the Denver area include small tributary reservoirs, channel improvements, and levees. Such projects would not have an adverse effect on normal streamflows in Nebraska.

### TECHNICAL AND ENGINEERING ASSISTANCE ON SHORE AND STREAMBANK EROSION

Mrs. SMITH. Please discuss your Section 55 work with respect to the 46-mile stretch of the Platte River from Hershey eastward to the Lincoln County line. When will you be finished? How much of the $500,000 appropriated will you be using on this project? What about the rest of it?

General DOMINY. We are providing technical assistance to the Twin Platte Natural Resources District for the 46-mile reach of the Platte River. This assistance includes obtaining field and aerial surveys, calculating erosion rates, preparing detailed general plans for each erosion site, calculating cost estimates, and providing generic contract specifications. The final report will be furnished to the Twin Platte NRD by mid-September 1986. We will use approximately $310,000 for this portion of the technical assistance. The remaining available funds are being used to provide assistance in response to other requests.

Mrs. SMITH. Is there any budget request for Section 55 in your FY 87 request?

General DOMINY. The President's Budget for Fiscal Year 1987 does not include a request for funds to provide Technical and Engineering Assistance on Shore and Streambank Erosion.

Mrs. SMITH. Please provide for the record on updated table, as you did two years ago, showing the history of use and demand for Sec. 55 funds in the Missouri River Division and for the whole nation. Please include location of use of major projects utilizing Section 55 technical assistance.

General DOMINY. Yes, I will be glad to provide that for the record:

### SECTION 55 ALLOCATIONS

[Dollar amounts in thousands]

| Fiscal year | Missouri River Division | Nationwide |
|---|---|---|
| 1976[1] | $17.5 | $200 |
| 1977 | 25.0 | 247 |
| 1978 | 11.0 | 108 |
| 1979 | 15.0 | 181 |
| 1980 | 43.0 | 206 |
| 1981 | 22.0 | 140 |
| 1982 | 0.0 | 0 |
| 1983 | 0.0 | 0 |
| 1984 | 30.0 | 30 |
| 1985 | 375.0 | 375 |
| Total | 538.5 | 1,487 |

[1] Including fiscal year 1976 transition quarter.

#### ASSISTANCE TO TWIN PLATTE DISTRICT

General DOMINY. The assistance we are providing to the Twin Platte Natural Resource District for the 46-mile reach of the Platte River in Lincoln County, Nebraska is the only major project in the Section 55 program.

Mrs. SMITH. Has the Corps ever cost-shared Section 55 assistance?

General DOMINY. The Corps has not cost-shared Section 55 assistance.

Mrs. SMITH. Does it intend to do so in the future?

General DOMINY. At the present time there are no plans to require cost-sharing for Section 55 assistance.

Mrs. SMITH. Does either HR6 or S1567 (the omnibus public works bill that has passed the House and is pending in the Senate) contain authority for cost-sharing Section 55?

General DOMINY. Currently, there is no provision in either HR6 or S1567 that would require cost-sharing for Section 55 activities.

#### REPUBLICAN RIVER

Mrs. SMITH. Turning now to the Republican River in Nebraska, please provide for the record a detailed discussion of your activities with respect to the reach from the Harlan County Dam in Nebraska to Milford Lake in Kansas? Please include activities related to all authorities, including Section 14, Section 205, Section 55, the snagging and clearing authority, and Section 22.

General DOMINY. A Reconnaissance Study on the Republican River between Harlan County Dam and Milford Lake was essentially completed in December 1985. Topographic maps were prepared for the Republican River flood plain from Guide Rock to Superior, Nebraska. An economic survey was conducted which focused on agricultural products grown in the area, both irrigated and non-irrigated. Hydrologic, hydraulic, and economic studies were made to assess frequency and severity of flooding, areas flooded, and damages due to flooding. Plans for reducing flooding were developed and evaluated, which included levees, tributary flood control structures, channel enlargement, and tree clearing. A four-unit levee plan and a tributary detention structure plan were determined to be marginal projects. Channel enlargement and tree clearing plans were found to lack economic feasibility by a wide margin. Extensive public coordination was carried out. The Lower Republican Natural Resource District was asked to consider serving as non-Federal sponsor of the feasibility phase of study; however, the board elected not to cost-share in the feasibility phase. A report is being completed which documents study results. Implementation of potentially feasible measures under our Continuing Authorities was considered; however, the scope of the work substantially exceeded the Federal cost limitations for these programs.

Mrs. **Smith**. While I deplore the outcome of the failure of a partnership to form between the Corps and the Lower Republican NRD down there, I wish to commend the Kansas City District commander, Col Amrine, and his staff for their excellent communications with local people and resultant excellent community relations with them.

Nevertheless, the people's choice is simply to dredge out the sediment and trees clogging the Republican River bed. They continue to question the Corps' conclusion that spraying the vegetation is not economically feasible.

My question is: Does the Corps simply assume that the Environmental Protection Agency won't allow this option? Has there been an exchange of memos or correspondence between the Corps and the EPA on this issue?

General **Dominy**. Spraying the vegetation does not achieve the desired benefit of improving the capacity of the river bed. Full vegetation removal is required to gain measureable hydraulic improvement. Periodic spraying as a maintenance measure to prevent vegetative regrowth would be a potential component of a vegetation removal option and was considered in the reconnaissance report. Since vegetation removal appeared to be economically infeasible, the issue of spraying did not receive formal comment. There have been contacts with EPA and other Federal and state agencies concerning the environmental effects of all plans that were considered.

Mrs. **Smith**. Please provide for the record a detailed discussion of the Corps' work on this option, including cost estimates and all other significant, pertinent consideration given.

General **Dominy**. A channel modification plan was formulated for the Guide Rock to Superior reach. The plan would enlarge the channel to a 70-foot bottom width and would provide approximately 10-year level of protection to 10,750 acres. The estimated cost of this plan would be $33 million. The benefit-cost ratio would be 0.3.

A vegetation removal plan was developed for the same area. That plan would consist of clearing and disposing of all woody growth for a distance of 300 feet back from each bank of the river. The project would provide less than 10-year level of protection. Project costs would be in excess of $21 million, and the benefit-cost ratio would be 0.1.

A combination plan consisting of channel enlargement and vegetation removal for the same area to provide 5-year level of protection would cost $25 million. The benefit-cost ratio would be 0.2.

In addition to the lack of economic feasibility, our studies indicate that stream fishery and wildlife habitat could be adversely affected by large-scale channel enlargement or tree clearing measures.

### MISSOURI NATIONAL RECREATIONAL RIVER

Mrs. **Smith**. In regard to the Missouri National Recreation River and Bank Stabilization project, what is the cost-sharing agreement situation on that?

General **Dominy**. The cost sharing formula agreed to by the Administration and the Senate Majority Leadership is being used as a basis for cost-sharing discussions with potential local sponsors.

Mrs. **Smith**. What did the Army request of the Office of Management and Budget for this new start? I see the President's budget proposes $1,000,000.

General **Dominy**. Our request submitted to the Office of Management and Budget was the same as the amount included in the President's budget.

Mrs. **Smith**. Is $21 million total authorized sufficient to complete this project?

General **Dominy**. Yes, the authorized $21 million ceiling on Federal appropriations will be sufficient.

Mrs. **Smith**. Please provide a discussion of the negotiations for cost-sharing between the Corps and prospective local sponsors.

General **Dominy**. Local interests have been contacted to explain the cost-sharing requirements. Negotiations to obtain the required agreements for various features of this project are continuing. We anticipate having a cost-sharing agreement by 30 June 1986 as required by the Fiscal Year 1985 Supplemental Appropriations Act.

## Questions Submitted by Congressman Daub

### PAPILLION CREEK AND TRIBUTARIES LAKES, NEBRASKA

*Question.* Do you have the capability for continued planning and engineering work for the Papio channelization project? If so, please expand on the extent of the Corps' capability.

Answer. Subject to the qualifications provided in earlier testimony, we have the capability to use $300,000 to continue and complete the continuation of planning and engineering studies on the proposed channelization project.

### DESHLER, NEBRASKA

Mrs. SMITH. I would like to talk a little bit about the City of Deshler over in Thayer County.

Over in Thayer County, the flooding in the City of Deshler has resulted in an NRD request for a study under Section 205, which could result in the construction of up to a $4 million structure.

Would you want to comment about that?

And please answer how cost sharing would fit into that, because that is the first thing they will want to know.

General DOMINY. Our Kansas City District Engineer, Colonel Amrine, has received a request from Deshler to assist them in reviewing this situation. Colonel Amrine plans to send a team of experts there this spring and conduct an initial appraisal under the continuing authority of a Section 205 at Federal expense.

I think this initiative will provide a firm basis of how to proceed in addressing the flood problem in Deshler. The appraisal should help in developing a consensus on what the best course of action will be. If there is a need for a project, a cost-sharing arrangement will be developed with Deshler.

Mrs. SMITH. Well, I appreciate that answer.

Of course, you are aware that there is a great difference of opinion in that area about what to do so I think that this is going to help everybody toward the proper solution. And I was glad to hear your comment about Commander Amrine. Let me say that he has had excellent relations with the folks in that area. And even though what he has said to them has not been what they wanted to hear, he has had fine communication. And we certainly appreciate all you have done, and we appreciate you being here.

And I have no further questions this morning, Mr. Chairman.

Mr. BEVILL. Thank you very much, Mrs. Smith.

I have some questions here, General, that I am going to submit for the record.

[The questions and answers follow:]

### GENERAL INVESTIGATIONS

#### NEW STUDY STARTS

Mr. BEVILL. Describe the Turkey Creek Basin, Kansas, and St. Joseph, Missouri & vicinity studies which are two of the twelve new studies included in the budget, on pages 2 and 3.

General DOMINY. Turkey Creek is a tributary of the Kansas River draining a 23-square mile area primarily in Kansas City, Kansas. The basin is fully urbanized and runoff can cause serious flooding in highly developed areas. The reconnaissance phase of the Turkey Creek Basin, Kansas study will address the feasibility of channel and bridge modifications, levees, and nonstructural measures.

At St. Joseph, Missouri, flooding occurred on June 7, 1984 resulting in one death and severe monetary losses. The city is protected from Missouri River floods by Federally constructed levees; however, flood problems remain along tributary streams, including Blacksnake Creek, Whitehead Creek. One hundred and Two River, Charles Street Drainage, and Mitchell Avenue Drainage. The reconnaissance phase of the St. Josehph, Missouri and vicinity study will address the feasibility of detention dams, channel modification, and levees along these streams.

### LAKE OF THE OZARKS, POTENTIAL CROSSING

Mr. **Bevill.** The Conference Report accompanying the FY 1986 Energy and Water Development Appropriation Bill directed the Corps to study the feasibility of a potential crossing of the Lake of the Ozarks in the vicinity of Osage Beach, Missouri.

What action has been taken in response to the Committee directive?

General **Dominy.** We have notified the State of Missouri that the feasibility phase of the Osage Basin study will be expanded to include a study of the Lake of the Ozarks highway crossing if the State agrees to pay all added costs, estimated to be $50,000. We are currently awaiting formal notification as to whether or not the State desires to have the Corps conduct the study.

### SALT CREEK, NEBRASKA

Mr. **Bevill.** I note on page 13 you are resuming a study of the Salt Creek and tributaries in Nebraska.

Why is the resumption necessary?

General **Dominy.** A 1979 flood insurance study for Lincoln, Nebraska indicated that the flood control improvements along Salt Creek in Lincoln did not provide the designed level of protection. As a result of those findings, we initiated a reconnaissance study which determined that a feasibility study was warranted under provisions of Section 216 of the 1970 Flood Control Act. Preliminary results of the feasibility study indicated that structural alternatives to upgrade the entire levee system are infeasible by a wide margin. Additional studies are required to identify courses of action to reduce or eliminate potential failure of segments of the levee system in high damage areas.

### MOTT, NORTH DAKOTA

Mr. **Bevill.** Describe the study of the Cannonball River at Mott, ND, which is being initiated in the current fiscal year.

General **Dominy.** This is a restudy of a deferred channel and levee project authorized by the 1958 Flood Control Act. The project was previously classified inactive due to lack of local support. In 1978, a temporary emergency levee was constructed to protect a portion of Mott from ice-jam flooding. The city of Mott has since developed a flood hazard mitigation plan which included fortification of the existing temporary levee. As a result of the renewed interest by the city, the project was reclassified to a deferred status in 1984. The restudy will determine whether the authorized levee or an alternative plan should be constructed.

## Construction, General

### MISSOURI RIVER LEVEE SYSTEM UNIT L–15

Mr. **Bevill.** What is the status of the L-15 Levee Unit portion of the Missouri River Levee System?

General **Dominy.** A preliminary analysis completed during FY 1985 indicated potential economic justification of the unit. The results were presented to local interests in October 1985. Subsequently, local interests provided a letter indicating that they understood the local cooperation requirements and requested that the Corps continue with the study. The Corps is proceeding with the planning studies based on this continued interest.

### BLUE RIVER CHANNEL

Mr. **Bevill.** Why is it necessary to make design changes costing $5 million in the channel portion of the Blue River Channel, Kansas City, Missouri, project?

General **Dominy.** Design studies performed during the past year for Stages 1 and 2 identified the need for additional rockfill and sheetpile for channel stability and an increase in channel bottom width at the lower end of the project for improved hydraulics. These changes resulted in the $5 million increase.

### LITTLE BLUE RIVER LAKES

Mr. BEVILL. What is involved in the "fiscal" completion of Longview Dam shown on page 42 in connection with the Little Blue River Lakes, Missouri, project?

General DOMINY. The fiscal completion of Longview Dam refers to the cost of surveys and monumentation for record purposes and for preparation of as-built drawings for the dam.

### MISSOURI NATIONAL RECREATIONAL RIVER

Mr. BEVILL. Describe the work planned in FY 1986 and FY 1987 on the Missouri National Recreational River, Nebraska and South Dakota, project which is one of the 41 new construction starts approved in the FY 1985 Supplemental.

General DOMINY. Fiscal year 1986 funds are being used for preconstruction planning and engineering necessary to provide a basis for a cost sharing agreement with local interests. Fiscal Year 1987 funds will be used to initiate land acquisition and construction of recreation facilities and bank stabilization measures.

## OPERATION AND MAINTENANCE

### BEAR CREEK LAKE

Mr. BEVILL. Explain the increased cost associated with the computer model at Bear Creek Lake, Colorado.

General DOMINY. The reservoir operating system computer model is being converted to allow use of information directly from field data collection equipment. This will expedite the Corps' response in managing reservoir releases in the Denver Metropolitan area during major runoff events.

### GAVINS POINT DAM—LEWIS AND CLARK LAKE

Mr. BEVILL. Explain the reference to recreation cost sharing in FY 1987 in connection with the Gavins Point Dam-Lewis and Clark Lake, Nebraska project.

General DOMINY. This work is being accomplished under a September 1983 agreement with the State of South Dakota under our Recreation at Completed Projects cost-sharing program. This agreement, which was supplemented in October 1985, provides for approximately $4.1 million of Federal contributions for recreation development. The Fiscal Year 1987 request for the Gavins Point Dam-Lewis & Clark Lake Project includes $381,000 for fish hatchery expansion, fish spawning habitat, fishing pier expansion, and camping pad construction.

### CLOSING

Mr. BEVILL. Thank you for a very fine presentation.

And this Committee will now adjourn until Monday at 1 o'clock.

MONDAY, FEBRUARY 24, 1986.

## NORTH PACIFIC DIVISION

### WITNESSES

BRIG. GEN. GEORGE R. ROBERTSON, DIVISION ENGINEER

HERBERT H. KENNON, CHIEF, ENGINEERING DIVISION

DELBERT E. OLSON, CHIEF, PLANNING DIVISION

JACOB SCHMITT, ASSISTANT CHIEF, CONSTRUCTION-OPERATIONS DIVISION

ALLEN W. SUMMERS, CHIEF, PROGRAM DEVELOPMENT OFFICE

J. MICHAEL SMITH, ASSISTANT CHIEF, PROGRAM DEVELOPMENT OFFICE

### INTRODUCTION

General ROBERTSON. Mr. Chairman, members of the distinguished committee, I have the honor to appear before you to report on the civil works activities of the Corps of Engineers in the North Pacific Division and to present our program requirements for Fiscal Year 1987.

Staff members with me today are Mr. Herb Kennon, Chief of Engineering; Mr. Deb Olson, Chief of Planning; Mr. Jake Schmitt, Chief of Operations; Mr. Al Summers, Chief of Program Development, and his assistant, Mr. Mike Smith.

Sir, I would like to submit for the record my prepared status report and to present a brief oral summary.

Mr. BEVILL. Without objection so ordered.

### GEOGRAPHIC AREA

General ROBERTSON. The geographic area of the North Pacific Division includes Alaska and the Pacific Northwest. These two areas comprise more than 880,000 square miles, or about one-fourth of the land area of the United States.

### FISCAL YEAR 1987 PROGRAM

Our program for Fiscal Year 1987 is $262,608,000. Construction accounts for about 38 percent of each dollar; operation and maintenance of existing projects takes about 59 percent; and general investigations is allocated about three percent. Our construction program includes $10 million to be derived from the inland waterways trust fund. The Fiscal Year 1987 program I am presenting will permit continuation of 13 general investigations, six of which will be completed. Also, three studies will be funded as new starts.

The program will allow construction to proceed on 11 projects. Under operation and maintenance, we will continue to operate and maintain 34 multiple purpose hydropower and flood control projects and 36 navigation projects.

Our water resource projects serve a variety of needs. I will outline our program in each of the primary areas it serves.

### HYDROPOWER

The Columbia River Basin is the source of more than 73 percent of the Northwest's electrical energy. Last fiscal year, the Columbia River hydropower system generated 135 billion kilowatt-hours of pollution-free energy. The Corps of Engineers' 21 hydroelectric projects in the Pacific Northwest generated 58 billion kilowatt-hours, or about 32 percent of the total electrical energy produced by all sources in the region. It would require more than 97 million barrels of oil to generate the equivalent amount of energy. This is enough to provide the electrical needs of three cities the size of Los Angeles.

### CHIEF JOSEPH DAM, WASHINGTON

Our efforts to improve the overall efficiency and longevity of our power projects are continuing. Work to uprate the original 16 power units at Chief Joseph Dam on the Columbia River will be completed with Fiscal Year 1987 funds. This will bring the project's power capacity to almost 2.3 million kilowatts, reflecting a ten percent increase.

We are actively seeking resolution of a contract dispute with the turbine manufacturer to correct the efficiency problem in the additional 11 units. Gaining the contract-required efficiency would result in $6.5 million worth of additional power each year.

### LIBBY DAM, MONTANA

At Libby Dam in Montana, we are making good progress settling claims for downstream erosion. Of 44 claims currently received, 27 are complete and only 17 are being evaluated and negotiated. We expect to complete negotiations on these remaining claims within 90 days.

### SNETTISHAM, ALASKA

At the Snettisham hydroelectric project in Alaska, tunnel construction for a third unit in the underground powerhouse will be essentially completed this fiscal year. Our scheduled power-on-line date is February 1989.

### POWERHOUSE MODERNIZATION AND REHABILITATION

Modernization work is continuing to bring powerhouse equipment up to date at McNary, John Day and Bonneville Dams on the Columbia River and Ice Harbor Dam on the Snake River. Rehabilitation of turbine-generator units at John Day Dam is underway and will continue to 1991. This program is necessary to maintain the Corps' contribution to regional power supplies.

It is interesting to note that, in reviewing our program of power projects, for an investment to date of $5 billion, we have accumulated total benefits from these power projects of $26 billion.

### FISH FACILITIES

At the same time we are upgrading our hydropower facilities, we are working to improve the survival of migrant salmon and steelhead at our projects in cooperation with the Northwest Power Planning Council and other regional fisheries' interests. This is accomplished through special flows and spills for fish, transport by barges and trucks past dams, and turbine screens and bypass systems at powerhouses.

### BONNEVILLE DAM, OREGON AND WASHINGTON

At Bonneville Dam, Fiscal Year 1987 funds will continue construction and modification of the juvenile fish bypass systems. Structural modifications will be installed and tested at the second powerhouse to correct low fish deflection efficiencies.

### JOHN DAY DAM, OREGON AND WASHINGTON

Construction of new juvenile fish passage facilities at John Day Dam, including this fish flume, is progressing well. All 16 hydropower units are scheduled to have screens installed by Spring 1987.

### FISH BYPASS FACILITIES

Studies investigating the feasibility of new or improved bypass facilities at the Dalles, Ice Harbor and Lower Monumental Dams will continue in Fiscal Year 1986.

Good progress is being made on the fisheries components of the Lower Snake River Fish and Wildlife Compensation Plan. Of nine planned hatchery complexes, seven are operational. The final two are scheduled for completion in Spring 1987 and in 1989.

Our efforts to improve the Columbia and Snake River fisheries have resulted in another record year in steelhead runs and vast improvements in other species.

### FLOOD CONTROL

Turning to flood control, major floods along the Columbia River are essentially controlled as a result of about 400 miles of levees and 34 storage projects, of which 22 are Corps of Engineers and three Canadian. In 1985 these projects prevented more than $100 million in flood damages.

### CHENA RIVER LAKES, ALASKA

Construction at the Chena River Lakes project in Alaska will be completed and the levees turned over to local interests in Fiscal Year 1987. A study seeking ways to modify flood control releases to reduce downstream flooding in newly developed areas is scheduled for completion in Fiscal Year 1987.

### WILLOW CREEK DAM, OREGON

Willow Creek Dam at Heppner, Oregon continues to be the inspiration and model for similar roller compacted concrete dams in the U.S. and abroad. This new, state-of-the-art method of construction results in significant cost and time savings. We are currently applying this technique to effect savings at military paving projects as well as civil works projects.

### ELK CREEK DAM, OREGON

In Fiscal Year 1986, we are continuing road relocation and starting construction of Elk Creek Dam in Oregon. Use of roller compacted concrete will reduce the cost of the dam by $12 million.

### BANK PROTECTION IN OREGON AND WASHINGTON

Measures to control bank erosion along the lower Columbia River in Washington and Oregon and the Willamette River in Oregon protect riverside development and stabilize the river channel. Fiscal Year 1987 funds will be used to construct bank protection improvements at three sites on the Columbia and two on the Willamette.

### SECTION 205 PROGRAM

Our Section 205 small flood control projects program continues to be active. One study is addressing means to reduce severe flooding—most recently last month—on the Salmon River in Idaho due to ice jams. We are continuing to work on this problem and will have a report completed this fiscal year.

### FLOOD EMERGENCY WORK

In January and February of this year we again responded to a flood emergency under PL 99 authority by raising and strengthening levees along the Salmon and Lemhi Rivers.

### HOMER, ALASKA

At Homer, Alaska, Fiscal Year 1987 funds will be used to complete a feasibility report identifying a solution to serious erosion problems at Homer Spit.

### CHEHALIS RIVER AT SOUTH ABERDEEN AND COSMOPOLIS, WASHINGTON

Planning and engineering studies for flood control improvements on the Chehalis River at South Aberdeen and Cosmopolis in Washington will be completed with Fiscal Year 1987 funds.

### STREAMBAK EROSION IN ALASKA

Efforts to resolve bank erosion problems at Bethel, Galena and Dillingham, Alaska are underway this fiscal year.

### MALHEUR LAKE, OREGON

Record flooding at Malheur Lake in the closed Harney Lake Basin in Oregon has caused an estimated $18.2 million in damages to ranches, farmland, highways and a railroad. Detailed feasibility studies are being conducted on an accelerated schedule and will be completed this year.

### MUD MOUNTAIN DAM, WASHINGTON

At Mud Mountain Dam, Washington, construction will begin this year to bring the 1948 embankment structure up to modern dam safety standards. Our highest priority includes investigation of measures to control seepage through the core. We also propose to raise the dam and spillway walls to control major floods.

### MOUNT SAINT HELENS, WASHINGTON

At Mt. St. Helens in Washington, the permanent outlet for Spirit Lake was completed in April and the lake was drawn down to its safe operating level by September. The feasibility report and decision document addressing the sediment problem was transmitted to Congress in November 1985. The recommended solution calls for a sediment rentention structure, downstream dredging and minimal levee construction. The budget provides $17 million to initiate contruction.

### DREDGES "ESSAYONS" AND "YAQUINA"

Moving to navigation, our Fiscal Year 1987 program includes funds for 36 navigation projects.

The dredges *Essayons* and *Yaquina*, two of the Corps' four hopper dredges in its minimum fleet, removed 10.2 million cubic yards of material from west coast river and harbor projects last fiscal year.

In addition, the ESSAYONS successfully completed a national defense dredging assignment for the U.S. Navy at Alameda Naval Air Station, California.

### SIUSLAW RIVER AND BAR, OREGON

At Siuslaw River, Oregon, construction to extend the entrance jetties was completed in October 1985, under budget and almost a year ahead of schedule.

### SECTION 107 PROGRAM

Under the Section 107 small navigation projects program, we plan to construct a breakwater at Mekoryuk, Alaska and have prepared final engineering documents for construction of a deep-draft turning basin on the Columbia River at Kalama, Washington in Fiscal Year 1986. Plans and specifications will be prepared for new small boat harbor projects at Seward, Saxman and improvements at Juneau and Dillingham, all in Alaska. Studies are underway at additional locations in Alaska, Washington, Oregon and Idaho.

### ICE HARBOR LOCK AND DAM, WASHINGTON

Dredging downstream of Ice Harbor Dam on the Snake River in Washington is widening the navigation channel to correct hazardous conditions for tows near the project's lock. Completion is scheduled for April.

### NEW LOCK AT BONNEVILLE DAM, OREGON AND WASHINGTON

At Bonneville Dam, plans and specifications for initial work on a new navigation lock are being completed, and we expect to award contracts for relocations and site preparation work this fiscal year. The new lock is scheduled to be operational in 1992.

Mr. **Bevill**. Where is that project?

General **Robertson**. That is to be the new Bonneville Lock, located at Bonneville Dam in Oregon and Washington, sir.

### BELLINGHAM AND OLYMPIA HARBORS, WASHINGTON

Fiscal Year 1987 funds will be used to initiate and complete reconnaissance reports on Olympia, shown here, and Bellingham Harbors, Washington, and to complete an interim feasibility report on Anchorage Harbor, Alaska.

### GRAYS HARBOR, WASHINGTON

Design and environmental studies for channel and bridge clearance improvements to the deep-draft project at Grays Harbor, Washington will be completed in Fiscal Year 1987.

### SEATTLE HARBOR, WASHINGTON

Planning and engineering studies to improve the east, west and Duwamish waterways in Seattle Harbor are progressing. Fiscal Year 1987 work will continue studies and initiate design to replace a constricting railroad bridge.

### SAINT PAUL ISLAND HARBOR, ALASKA

At St. Paul Island, Alaska, planning and engineering studies to improve the harbor will be continuing in Fiscal Year 1987.

### PUGET SOUND, WASHINGTON

The Puget Sound dredge disposal analysis study, a joint cooperative effort with the Environmental Protection Agency and the State of Washington, began in April 1985. Site selection for dredging disposal areas in the Seattle-Tacoma-Everett area will be determined in Fiscal Year 1986, with sites for the balance of the Sound identified in Fiscal Year 1987.

### SUMMARY

In summary, our Fiscal Year 1987 program of $262,608,000 provides for continued operation of our existing water resource system, as well as for continued orderly development.

Mr. Chairman, this concludes my remarks. I will be happy to answer any questions you may have.

[The statement of Brig. Gen. George R. Robertson follows:]

# FISCAL YEAR 1987 STATUS REPORT TO CONGRESS
# CIVIL WORKS ACTIVITIES
# IN THE NORTH PACIFIC DIVISION

BRIG. GEN. GEORGE R. ROBERTSON, DIVISION ENGINEER

Mr. Chairman and distinguished members of the committee, I have the honor to appear before this committee to report on the civil works activities of the Corps of Engineers in the North Pacific Division and to present our program requirements for Fiscal Year 1987.

## AREA OF RESPONSIBILITY

The North Pacific Division comprises two widely separated geographical areas: The northwestern region of the United States, encompassing all or parts of seven states, more commonly referred to as the Pacific Northwest; and the State of Alaska. These two areas total 883,000 square miles, or about one-fourth of the land area of the United States. The Division headquarters is located in Portland, Oregon, and the four district offices are at Portland, Oregon; Seattle, Washington; Walla Walla, Washington; and Anchorage, Alaska.

## COLUMBIA RIVER BASIN

The Columbia River is a major physical feature of the Pacific Northwest. Flowing for a distance of 1,200 miles from British Columbia, Canada to the Pacific Ocean, it drops in elevation about 2,600 feet on its journey.

The Columbia Basin is the third largest drainage system in the continental United States. The Corps of Engineers' role in the Columbia Basin has been to develop its water resources for flood control, navigation, hydropower and other purposes. Protection of the environment and the rich natural resources of the region continues to be of primary concern.

## PROGRAM SUMMARY

Our program for Fiscal Year 1987 totals $262,608,000. Construction accounts for $99,300,000, or about 38 percent of each dollar; Operation and Maintenance of existing projects takes $155,242,000, or about 59 percent; and General Investigations for potential new projects is allocated $8,066,000, or about three percent of each requested dollar. Our construction program includes $10,000,000 to be derived from the Inland Waterways Trust Fund.

The FY 87 program will permit continuation of 13 General Investigations, six of which will be completed. Also, three studies will be funded as new starts. The program will allow construction to proceed on 11 projects. Under Operation and Maintenance, we will continue to operate and maintain 34 multiple purpose hydropower and flood control projects and 36 navigation projects.

Our existing and planned water resource projects are designed to serve a variety of needs. I will outline our program in each of the primary areas it serves.

## HYDROPOWER

Hydroelectric power is vital to the Pacific Northwest's economic health. The Columbia River Basin is the source of more than 73 percent of the region's electrical requirements. Last fiscal year, the Columbia River Hydropower System generated 125 billion kilowatt-hours of pollution-free energy.

The Corps of Engineer's 21 hydroelectric projects in the Pacific Northwest generated 58 billion kilowatt-hours, or about 32 percent of the total electrical energy produced by all sources in the region. This would be enough energy to meet the needs of three cities the size of Los Angeles for one year. The 58 billion kilowatt-hours is equivalent to over 97 million barrels of oil.

The U.S.-Canadian Columbia River Treaty projects contain nearly half of the total Columbia basin active reservoir storage available to the Corps of Engineers for power and flood control regulation. In 1984-85 the Columbia River flow at the Canadian border contributed 42 percent of the total flow measured at The Dalles.

Mr. Peter Johnson, Administrator of Bonneville Power Administration, and I are the U.S. entities for the treaty and Mr. Chester Johnson, Chairman of British Columbia Hydro and Power Authority, is the Canadian entity. Together we coordinate the operation of the Columbia River Treaty projects to optimize power and flood control benefits.

## POWERHOUSE REPAIR AND MODERNIZATION

The aging of major generating equipment at our powerhouses has resulted in an increasing frequency of breakdowns and lengthier repairs. In recent years, the average number of generating units available to produce power has dropped from 95 percent to 90 percent of the 153 units in North Pacific Division powerhouses. Loss in generating unit availability is an increasingly serious threat to the reliability and flexibility of the Corps' contribution to regional power supplies. In addition to operational impacts, this 5 percent loss of system generation has major economic consequences, with estimated losses in excess of $100 million annually as power system deficits occur in the future.

We are continuing work to modernize and rehabilitate power generating equipment at the McNary, John Day and Bonneville projects; similar work was initiated this fiscal year at the Ice Harbor project. When complete, this work at these powerhouses is expected to return generating unit availability to approximately the 95 percent level at these four major powerhouses, as well as gain improvements in generating efficiency and extend the useful life of major equipment.

The most extensive rehabilitation work currently underway is at the John Day powerhouse with $3,900,000 requested to continue the work in FY 87. John Day, due to its size and location, is a key plant in the Northwest hydropower system. The major work at John Day, which consists of refurbishing all generator main windings and major repair and reconditioning of all hydraulic turbines, will continue through 1991. At McNary and the Bonneville first powerhouse, two of our older powerplants, the work consists mainly of modernizing and increasing the efficiency of obsolete equipment. The Ice Harbor work being started this fiscal year includes studying replacement of major components of the three oldest hydraulic turbines in order to reduce significant maintenance problems.

## BONNEVILLE SECOND POWERHOUSE

The Bonneville Lock and Dam project, located on the Columbia River about 40 miles upstream of Portland, consists of an initial 10-unit powerhouse of 518,000 kilowatts and a new second powerhouse with 8 units of 558,000 kilowatts, which went on line three years ago. The total installed capacity of this project is now 1,076,000 kilowatts.

During FY 86, construction will continue on the juvenile fish bypass systems, a debris removal system, onsite recreational facilities, and project support facilities. The project is scheduled to be completed in FY 91.

Work to be accomplished in FY 87 includes construction and modification of the juvenile fish bypass systems and project support facilities.

To protect the juvenile fish migrating down the Columbia River from heavy losses due to passing through the power-generating turbines, the Corps has constructed submerged traveling screen (STS) juvenile fish bypass systems at both Bonneville powerhouses and has made initial evaluations of their effectiveness.

At the first powerhouse, the system works efficiently as designed. At the second powerhouse, however, the screen efficiencies are low--only 20 to 35 percent of the fish are being deflected away from the turbines and into the bypass system. As a result, we have initiated an intensive effort to determine the causes of the low bypass efficiency and correct them.

Based upon intensive field investigations in 1985, we plan to install and test structural modifications to the second powerhouse this spring. To protect juvenile fish from undue losses while this work is in progress, powerhouse operations will be limited to three of the eight turbine-generator units during the most intensive juvenile fish passage period. We will also provide supplemental spills to assist these migrants past the project.

We are continuing activities at the Steigerwald Lake area to fulfill mitigation requirements for terrestrial wildlife for completed facilities at the Bonneville project. So far, we have successfully negotiated the purchase of 682 acres, and we are continuing to prepare mitigation plans in cooperation with wildlife agencies.

## CHIEF JOSEPH DAM

Chief Joseph Dam is located on the Columbia River just upstream from Bridgeport, Washington. Initial power installation of 16 generating units producing a total of 1,024,000 kilowatts was completed in 1958. Construction of an additional 11 units was completed in 1979, bringing the total installed capacity to 2,069,000 kilowatts. Currently the original 16 power units are being refurbished and uprated. This work, when completed in FY 87, will add an additional 204,000 kilowatts, bringing the total project installed capacity to 2,273,000 kilowatts.

We are actively seeking resolution of a contract dispute with the turbine manufacturer to correct the efficiency problem in the additional 11 units. Gaining the contract-required efficiency would result in $6.5 million worth of additional power each year.

## LIBBY DAM

Section 56 of Public Law 93-251 authorizes the Corps to compensate drainage districts and owners of land in Boundary County, Idaho, for certain damages from higher river flows which occur during drawdown operations at Libby Dam. This area lies downstream of Libby Dam between Bonners Ferry and the Canadian Border, and covers land on both sides of the Kootenai River for about 47 miles. Total compensation is limited to $1.5 million.

Twenty-one drainage districts are located within the area adjacent to the river. Fourteen of these districts have filed claims for compensation under the act. Eleven of the drainage districts have been paid $512,000 to compensate them for modifications to facilities and additional pumping operational costs. Three claims from drainage districts remain outstanding.

A total of 44 claims from drainage districts and private owners has been received for damages associated with pumping/drainage or erosion. Nineteen have been closed at a cost of $807,000. Eight claimants have signed releases and the Corps is helping them clear title to their lands so they may be paid. The remaining 17 claims are still being evaluated and negotiated.

## SNETTISHAM

The first phase (Long Lake) of the Snettisham hydroelectric project in Alaska was completed in 1976. In 1983, the Alaska Power Administration's power demand forecast for the Juneau area indicated that additional power generation at the Snettisham project would be needed in the 1986-87 time frame. In FY 84 work was begun on the second phase (Crater Lake), which provides for construction of a power tunnel from Crater Lake to the existing powerhouse, and installation of an additional 27,000-kilowatt unit. Work has been continuing since that time. The most recent contract award was in August 1985 for procurement of the hydraulic turbine.

In FY 87, work will continue on the power tunnel, control gates and lake tap features. Power-on-line is scheduled for February 1989.

## LUCKY PEAK LAKE

Lucky Peak Lake is a Corps of Engineers flood control project located on the Boise River in southwestern Idaho ten miles southeast of Boise. In June 1980 the Boise Project Board of Control (BPBC), which is comprised of five irrigation districts, was granted a FERC license to construct and operate a power facility at Lucky Peak Lake. Project construction is being completed in phases over a four year period, with power-on-line scheduled for April 1988. Corps of Engineers involvement includes the review and approval of elements directly affecting the project's operation and safety. Additionally, Corps construction and geological staff will monitor construction activities and consult with BPBC staff on an as-needed basis.

## COLUMBIA RIVER AND TRIBUTARIES STUDY

We are requesting funds to continue the Columbia River and Tributaries Study. During FY 87, emphasis will be placed on updating the multiple-purpose system management plan for the Columbia River and its major tributaries. In addition, resource assessments and detailed studies will be made on measures necessary to insure that multi-purpose considerations are reflected in the Northwest Power Planning Council's plans.

We will also continue the investigation of selected multi-purpose projects oriented toward meeting critical regional water resources needs, such as balancing competing river water uses, flood damage reduction, hydropower generation, navigation and low flow augmentation.

Detailed feasibility studies and a final report and EIS on multiple-purpose development in the Clearwater River Basin in Idaho will be completed in November 1987. Detailed feasibility studies and a draft report and EIS on multiple-purpose development on the Similkameen River in Washington will also be completed. Detailed feasibility studies are continuing on developing a multiple-purpose project at the Fitzgerald Falls site on the St. Joe River in Washington. These sites could provide needed local flood protection, supplemental water supply, flow augmentation for fish, and hydropower generation for the region.

Detailed studies will be continued on providing shallow draft commercial navigation from Pasco to the Wenatchee, Washington area on the Columbia River, making possible the shipment of agricultural commodities from central Washington down the Columbia River and the delivery of petroleum and fertilizer upriver.

Detailed feasibility studies of providing increased flood protection along the lower Columbia River will also be continued with FY 87 funds. Recent study of the physical condition of the existing lower Columbia River levees has cast doubt on their ability to provide protection from a 100-year flood event. Providing at least 100-year flood protection to the developing lower Columbia River area is essential to the economy of the area.

## STUDIES ON UPPER SNAKE RIVER

Upper Snake River and Tributaries extends from the headwaters of the Snake River in Wyoming down to and including Weiser River in Idaho, a distance of about 400 miles. The watershed includes about 73,000 square miles, mostly in southern Idaho.

Current water resource problems and opportunities are associated with uses of surface and groundwater resources in the interest of flood damage reduction, water quality, hydropower, irrigation, public water supply, fish and wildlife, and recreation. Power demand in southern Idaho has grown due to new irrigation development requiring high-lift pumping, conversion of irrigation systems to sprinklers, and growth in the food and phosphate processing industries. Another major concern is the prospect of lower flows in the Snake River resulting from projected irrigation development. The Idaho Department of Water Resources has concluded that storage for power generation and streamflow maintenance should be a priority consideration.

There are five interim studies underway which are addressing the water resources needs of the Upper Snake River: Owyhee River Basin, Portneuf River Basin, Weiser River Basin, Snake River in Wyoming, and Big Lost River. An interim feasibility report and EIS will be completed on the Galloway multipurpose storage site on the Weiser River in November 86. Galloway dam has strong local and state support, and is included in the program of the Northwest Power Planning Council.

FY 87 funds will be used to complete detailed studies and prepare an interim feasibility report and EIS for the Owyhee River Basin in November 1987, continue detailed studies of alternative plans for the Portneuf River Basin, and complete preliminary studies and initiate detailed studies of alternatives for both the Snake River in Wyoming and Big Lost River interim studies.

## ANADROMOUS FISHERIES PROGRAM

To mitigate the impacts of its dams in accordance with Federal law, the Corps has provided fish hatcheries, adult and juvenile fish passage facilities, water quality control structures, and special flows and spills. The Corps also funds about $2 million of applied research each year under its Fish Passage Development and Evaluation Program to improve fish passage efficiency and secure necessary information for the design, construction and operation of effective fish passage facilities. This program has been in effect since 1953.

The Pacific Northwest Electric Power Planning and Conservation Act of 1980 (PL 96-501) created the Northwest Power Planning Council and directed it to establish a Fish and Wildlife Program to protect, mitigate, and enhance fish and wildlife resources impacted by hydroelectric development. The Council adopted its initial Fish and Wildlife Program in November 82, and amended it substantially in October 84. While the Fish and Wildlife Program provides for resident fish and wildlife, the main thrust of this program is to make major improvements in the survival of juvenile seaward migrant salmon and steelhead.

We are working closely with the Northwest Power Planning Council, Bonneville Power Administration, the northwest fish and wildlife agencies, and Indian Tribes in implementing applicable measures of the Fish and Wildlife Program through our existing authorities and available funds. The Corps' primary efforts focus on the protection of migrating juvenile salmon and steelhead at mainstem dams on the lower Snake and Columbia rivers through special flows and spills for fish, transport by barges and trucks past dams, and turbine screens and bypass systems at powerhouses.

Annual coordination of Water Budget flows and an interim juvenile fish passage plan involving special spills, powerhouse operations, and transportation guidelines has been difficult, controversial, and time consuming, but the Corps is continuing to work on these matters in a positive way and is collecting additional needed data on which to base future decisions.

Other Power Council Fish and Wildlife Program measures ask the Corps to continue upgrading existing juvenile fish facilities at Lower Granite, Little Goose, McNary, and Bonneville dams, including improving fish deflection efficiencies; completing new juvenile fish passage facilities now under construction at John Day Dam; and constructing similar facilities at The Dalles, Ice Harbor, and Lower Monumental dams. We are engaged in extensive studies to improve turbine screen deflection efficiencies at our facilities and are constructing new juvenile fish facilities at John Day Dam. Turbine screens and bypass facilities were operational on nine of 16 John Day Dam turbine units during the spring of 1985 and evaluations indicate satisfactory fish deflection efficiencies. The remaining units will be equipped with screens by spring 1987.

The Corps has also undertaken feasibility studies related to providing similar juvenile fish bypass facilities at The Dalles, Ice Harbor, and Lower Monumental dams. Prototype tests in 1985 of such facilities at The Dalles Dam found fish deflection efficiencies to be low. Additional tests will be conducted in 1986.

Prototype tests of turbine screens will also be conducted at Lower Monumental Dam in 1986 and at Ice Harbor Dam in 1987. Feasibility studies to be completed following prototype testing will consider alternatives and include justification analysis and recommendations.

## LOWER SNAKE RIVER FISH AND WILDLIFE COMPENSATION PLAN

The Lower Snake River Fish and Wildlife Compensation Plan was authorized to compensate for fish and wildlife losses attributed to the construction of Ice Harbor, Lower Monumental, Little Goose, and Lower Granite lock and dam projects on the lower Snake River in Idaho and Washington. The plan, currently estimated at $177 million, includes construction of nine fish hatcheries and associated satellite facilities to produce annually 16 million juvenile spring, summer and fall chinook salmon; 11 million juvenile steelhead; and about 280,000 trout. The plan also includes pheasant rearing, and development of about 4,000 acres of on-project wildlife lands and about 24,000 acres of off-project wildlife lands with access for fishing and hunting.

Seven of the nine hatcheries and six of 13 satellite trapping-acclimation facilities are operational. Another satellite will be operational in 1986 and one additional hatchery and five satellites should be operational in FY 87.

The last satellite is scheduled to be operational in 1989. Construction of the remaining hatchery (Clearwater Hatchery) has been delayed one year, until 1989, to study supplying water from Dworshak Reservoir to reduce the risk of infectious hematopoietic necrosis (IHN) which has been a serious problem at the adjacent Dworshak National Fish Hatchery. The fish rearing portion of the plan is scheduled for completion in 1989.

## LOWER SNAKE RIVER COMPENSATION PLAN
## SPECIAL REPORT TO CONGRESS

The Lower Snake River Fish and Wildlife Compensation Plan includes a system of fish propagation facilities, gamebird stocking, wildlife habitat development, and fisherman and hunter access. It also provides for the acquisition of appropriate estates in lands for habitat development, and fisherman and hunter access on a willing seller-willing buyer basis.

In submitting his report, the Chief of Engineers made a commitment to report to Congress within five years after first receipt of funds the extent to which it had been practical to acquire lands and interest in lands on a willing seller-willing buyer basis and to make recommendations for additional measures needed to complete compensation. A special report on this subject has been prepared and submitted to the Chief of Engineers.

## FLOOD CONTROL

Flooding at major damage centers in the Columbia River Basin is essentially controlled as a result of levees and a major system of storage reservoirs. On the lower Columbia, in the vicinity of Portland, Oregon, 400 miles of levees and 25 upstream flood control reservoirs have reduced what would have been disastrous floods to minor damage levels. For this area, damages prevented by upstream reservoirs have averaged $26 million annually since the last major new dams became operational in 1973. The reservoirs in the basin, in which flood regulation is prescribed by the Corps of Engineers, include three Canadian projects--operated through the Columbia River Treaty--and six Bureau of Reclamation projects.

Flood damages prevented to date by Corps of Engineers projects in the Pacific Northwest and Alaska now total $7,475,000,000.

## CHENA RIVER LAKES

The Chena River Lakes project consists of the Chena River Dam and Floodway and the Tanana River Levee in Alaska. It provides protection to Fairbanks and adjacent areas, including Fort Wainwright, from recurring flood damages from the Chena and Tanana rivers. When its gates are closed or throttled, the dam diverts flood waters from the Chena River down a floodway behind an earth dam to the Tanana River. There is no pool except during floodway operation.

A debris control structure was completed in FY 85 to provide for assured gate closure during flood events. Work scheduled for FY 86 includes a visitors facility, operations building, construction project bridge demolition, and floodway drainage improvements. Two additional groins to protect the Tanana River levee are also scheduled for construction. The project is expected to be completed and turned over to local interests in FY 87.

Some flooding has been experienced along the Chena River during flood control operations. Most of this is due to development that has occurred since initiation of flood control efforts. We initiated studies of potential modifications to our regulatory releases in FY 85 and plan to complete them in FY 87.

## WILLOW CREEK

Willow Creek Dam at Heppner, Oregon, the first U.S. dam constructed of Roller Compacted Concrete (RCC), was completed three years ago at significant cost and time savings. One minor downstream flood has already been prevented by the dam.

The dam continues to be the inspiration and model for similar RCC dams by other public and private agencies in the U.S. and abroad. This new, state of the art method of construction is also being applied to effect savings at military and civilian airport and highway paving projects.

## LOWER COLUMBIA RIVER BASIN AND WILLAMETTE RIVER BASIN BANK PROTECTION

Bank erosion along the Lower Columbia River is confined mainly to the 125 mile reach from Washougal, Washington to the Pacific Ocean. Projects in Oregon and Washington prevent bank erosion at critical areas; protect existing levees, industrial sites and utilities; and stabilize the river channel. Normal spring high water, wind waves and vessel waves are the primary causes of erosion.

Construction was completed at three sites in FY 85, and is scheduled to be completed at another in FY 86. The 128th Avenue site in Portland will be started in FY 86. Three sites are scheduled for construction in FY 87. Continued new erosion and changing use patterns--including increased navigation pressure--will require that bank protection be continued as a river control measure indefinitely.

Bank protection on the Willamette River is continuing. This work is to prevent loss of property through erosion and channel changes. The Finnicum location near Dayton is scheduled in FY 86, and two other sites are scheduled in FY 87. River control measures will have to be continued indefinitely to keep this dynamic system within reasonable boundaries.

## MILL CREEK LAKE (MAJOR REHABILITATION)

Structural rehabilitation and fish habitat enhancement is currently underway at Mill Creek flood control project. The project is located in the city of Walla Walla, Washington, and was placed in service in 1942. Rehabilitation of this project began in FY 80 and all work will be completed with FY 86 funds.

## SECTION 205 PROGRAM

The Section 205 Small Flood Control Projects Program has continued to be very active. In FY 85, planning was initiated or continued on detailed project studies at several sites including the study of Salmon River near Salmon, Idaho. This study is addressing means to reduce the severe flooding that has occurred in Salmon due to ice jams on the Salmon River. In FY 86, the Corps' Cold Regions Research and Engineering Laboratory will conduct studies to determine the engineering feasibility of constructing an ice barrier on the Salmon River upstream of Salmon.

Plans and specifications for the project to increase the level of flood protection to Clatsop County Diking Improvement District No. 5 in Oregon is scheduled for completion in FY 86. Reconnaissance and detailed project studies are underway at other locations.

## FLOOD CONTROL GENERAL INVESTIGATIONS SUMMARY

The FY 87 program includes $5,683,000 to continue 15 Flood Control studies and two Comprehensive Basin studies, involving six interims; and to complete six Flood Control studies, including five surveys and one Continuation of Planning and Engineering study.

During FY 86, General Investigations funds will complete eight Flood Control studies, including five surveys, two Continuation of Planning and Engineering studies, and one Advance Engineering and Design study for the authorized Mount St. Helens Sediment Control Project. In addition, we will continue 18 Flood Control studies, including one for Continuation of Planning and Engineering. We also will continue two Comprehensive Basin studies, including six interims.

## CHEHALIS RIVER AND TRIBUTARIES

The Chehalis River Basin in Washington contains 2,114 square miles and drains into Grays Harbor in southwest Washington. The communities of Centralia, Chehalis, Aberdeen, and Hoquiam are subject to major flooding. Three interim feasibility reports have been completed, including two which recommended flood damage reduction improvements for urban areas at South Aberdeen-Cosmopolis and Centralia-Chehalis. Planning and engineering studies are proceeding for the South Aberdeen-Cosmopolis area in FY 86, and FY 87 funds will be used to complete this work. The Centralia-Chehalis report was completed in 1983 and is at the Washington, D.C. level for review. An interim report completed in 1982 recommended the addition of hydropower and fish enhancement facilities to Wynoochee Dam near Aberdeen. This report is also at the Washington, D.C. level for review.

Detailed studies of the remaining flood problem areas at Aberdeen and Hoquiam are continuing in FY 86. FY 87 funds will be used to complete detailed studies and prepare a draft and final feasibility report and EIS.

## UMPQUA RIVER AND TRIBUTARIES, OREGON

The 4,560-square mile Umpqua River Basin drains much of southwestern Oregon. Its major water resource needs are located in the South Umpqua River Basin. Average annual flood damages are estimated to exceed $2 million at 1985 price levels. Depleted streamflows in the summer have created a need for approximately 25,000 acre-feet of stored water for irrigation, municipal, and industrial purposes before the year 2020. An additional 30,000 acre-feet of water is needed to augment low summer flows for instream uses. The warm and polluted summer flows have been identified by fishery agencies as the major factor inhibiting restoration of anadromous fish resources.

The Board of County Commissioners of Douglas County has stated their strong support for the continuation of detailed studies and willingness to participate in construction cost-sharing.

FY 87 study funds will be used to continue detailed studies of alternative multi-purpose plans identified in a recently completed preliminary report.

## YAKIMA RIVER AT UNION GAP, WASHINGTON

The cities of Yakima and Union Gap, Washington are subject to flooding from the Yakima River. The flood plain includes 3400 acres of urban development and 2400 acres of agricultural lands. The proposed plan for protection against flooding is to construct two levees on the east and west banks, improve sections of existing levees by raising and additional riprap, installation of drainage control gates on existing culverts, and flood management of unprotected areas.

FY 86 funds are being used to continue planning and engineering studies for the levees and associated flood protection work. Completion is scheduled for December 86.

## HOMER SPIT, ALASKA

The City of Homer, Alaska, is located at the mouth of Kachemak Bay where the bay intersects Cook Inlet about 120 miles southwest of Anchorage. Homer Spit, which juts out about four miles from the Kenai Peninsula, contains the economic heart of Homer, with a thriving deepwater port, fuel storage facilities, fish processing plants, recreational development, and a recently completed 50-acre, $14 million Federal small boat harbor.

The spit is experiencing serious erosion which, as in the past, could cut deeply into the spit and sever the only highway connecting it to the mainland. The reconnaissance phase of the feasibility study, which includes a completed reconnaisance report and a signed cost sharing agreement, is expected to be completed in March 1986. Detailed study of alternative solutions will be initiated with FY 86 funds. FY 87 funds would be used to complete the feasibility report in March 1988.

### CHEHALIS RIVER AT SOUTH ABERDEEN AND COSMOPOLIS

FY 87 funds will be used to continue planning and engineering studies begun in FY 84 for flood damage reduction measures along the Chehalis River at South Aberdeen and Cosmopolis in Washington. Continuing planning and engineering will be completed in FY 87.

Existing average annual flood damages are estimated to be $2.7 million. The proposed project will provide flood protection to 1318 urban acres, approximately 1400 dwellings and many commercial, industrial and public structures.

### WILLAMETTE RIVER BASIN, OREGON

The Willamette River Basin is located in northwestern Oregon and is about 160 miles in length and contains about 12,000 square miles. The Willamette River Basin contains only about one-eighth of the area of Oregon; however, it contains about two-thirds of the State's population. Although total water yield of the basin is adequate to meet present and foreseeable needs, there is a flood problem in the winter and a shortage of water in the summer. The major flood of December 1964 caused damage in the basin estimated at $71 million. This damage would be more than six times greater at present price levels. Average annual flood damage for the basin is estimated at more than $39 million at 1985 price levels.

A 1970 Level B comprehensive study of the basin established the then-existing and future water and related land resource needs, including flood damage reduction, additional water supply, and hydropower. Based on recent evaluations of the 1970 plan and a request of the Northwest Power Planning Council to install temperature control facilities at three Corps dams in the basin, interim studies of the Santiam River Basin and the Comprehensive Review are underway.

FY 87 funds will be used to complete studies for a preliminary report on the Mill Creek Basin element of the Comprehensive Review interim study, and to continue detailed studies of alternative plans and evaluate technical data for the Thomas Creek and Temperature Control elements, respectively, of the Santiam River Basin interim study.

### BETHEL, GALENA AND DILLINGHAM, ALASKA

The Alaskan communities of Bethel, Galena and Dillingham have been the subject of recent Congressional interest because of serious erosion threatening public and private properties at each community.

Bethel, located adjacent to the Kuskokwim River about 85 miles inland from the Bering Sea, is an important trans-shipping center for Southwest Alaska, serving 48 villages. In response to a resolution of the Senate Committee on Environment and Public Works, a favorable feasibility report addressing the serious erosion problems at Bethel was completed in 1982. The report recommended authorization of a project of bank stabilization with rock riprap. This report is currently under review.

While awaiting authorization of the project, the City of Bethel obtained funds from the State of Alaska to construct an upper-bank bulkhead to protect some key facilities. In addition, as a result of critical erosion that occurred in May 1985, the Corps placed some rock revetment at the city's petroleum dock and at the downstream end of its bulkhead under the Emergency Bank Protection Continuing Authority of Section 14 of the Flood Control Act of 1946, as amended.

However, a critical situation still exists. This localized protection is believed to be vulnerable to flanking and may be lost in five years or less. The Alaska District Engineer has reevaluated the project recommended in his 1982 report considering actions taken by the city and work accomplished via Section 14, and finds that a permanent bank protection project is still needed and is economically justified. He also acknowledges that additional emergency work may be necessary until the Federal project is authorized and constructed. Continuation of planning and engineering studies leading to a General Design Memorandum on the permanent bank protection project will be completed this fiscal year.

Galena, Alaska, located adjacent to the Yukon River about 270 miles west of Fairbanks, is an important regional center with its airport that serves western Alaska. In addition, the airport is the site of a U.S. Air Force fighter interceptor base, which is the closest such facility to the Soviet Union. Galena has a long history of bank erosion and ice jam flooding that have caused damage and property losses. In 1971, an ice jam flood and bank erosion caused relocation of a portion of Galena. This created "new town" Galena about 1.5 miles upriver of "old town" Galena.

Commencing with construction of a flood control dike in 1943 that encompasses the airport, a number of erosion and flood control measures have been tried. Between 1959 and 1965, the Corps implemented a series of bank protection projects near the east end of the airport runway. An array of oil drums, sheet piling, and riprap along 3,100 feet of streambank (which employs freeze probes to maintain frozen ground conditions for structural stability) has been rather successful at checking erosion. The problems of bank erosion and possible protective measures at Galena are being evaluated in a reconnaissance study. Early study results indicate that an economically feasible plan is unlikely.

Dillingham, Alaska is located near the confluence of Nushagak Bay and Nushagak River in eastern Bristol Bay about 300 miles southwest of Anchorage. The shoreline fronting the town, which has steep bluffs 10 to 70 feet high, is experiencing erosion at a rate of about 12 feet per year. This erosion is threatening the town's water and sewer lines as well as other public and private property.

The Corps completed a reconnaissance level report in 1981 that concluded construction of protective measures was not economically justified. However, the current rate of erosion is about four times the rate evaluated in 1981. This erosion problem and possible solutions are being studied under the Coastal Erosion Interim of the Rivers and Harbors study.

The Resolution continuing appropriations for Fiscal Year 86, signed by the President in December 1985, directs that the Secretary of the Army accomplish emergency bank stabilization work at Bethel, Galena and Dillingham at full Federal cost, estimated at $1.5 million, within available funds previously appropriated in the 1986 Energy and Water Development and Appropriation Act (PL 99-141). In response, an array of possible alternative protection works is being developed for the Secretary of the Army's consideration.

## MALHEUR LAKE

Malheur Lake is the largest of three inter-connected lakes, Malheur, Mud and Harney, located in the closed Harney Lake Basin in southeast Oregon. Above normal rainfall during the past four years has caused Malheur Lake to rise more than seven feet above its historic level. High water has joined the three lakes into a single large lake which covers an area of about 177,000 acres.

To date, the resulting flooding has caused an estimated $18.2 million in damages to ranches, farmland, two State highways, local roads, and a railroad serving the commercial interests of the City of Burns, the Harney County Seat. FY 86 funds are being used to complete detailed feasibility studies that were initiated in late FY 85 on an accelerated schedule. The report is scheduled for completion this year.

## MUD MOUNTAIN

Mud Mountain Dam, about five miles upstream of Enumclaw, Washington on the White River, provides flood control protection for about 7,000 acres of land, including the towns of Auburn, Kent, Sumner, Puyallup, Fife and the industrial area of Tacoma. The dam has prevented about $46 million in flood damages since beginning operation in 1948. The dam is an earth and rockfill structure 425 feet high with a crest length of 700 feet.

Dam safety modifications are required to prevent failure due to overtopping of the dam and spillway walls during major flooding, failure of the outlet tunnel intake towers under major seismic events, and plugging of the intake towers by debris during major flooding. Planning and engineering work was initiated in FY 84, and construction to rectify these problems is scheduled to start in FY 86. FY 87 funds will provide for continuing construction.

A seepage problem was discovered in the dam core during geotechnical exploration FY 1985. Studies are being continued during FY 1986 to examine the problem and its severity, and to develop a solution. If necessary, the estimated Federal cost will be revised to reflect the proposed solution.

## ELK CREEK LAKE

Elk Creek Lake is one of three multipurpose storage projects authorized as the Rogue River Basin Project. It is located on a tributary of the Rogue River about 27 miles north of Medford, Oregon. The project, which includes a roller compacted concrete dam, will be operated as a system with the completed Lost Creek Lake and Applegate projects.

Construction of Elk Creek was initiated in 1971, and a county road and dam bypass were completed in 1973. In 1975, project construction was deferred due to environmental concerns. The $15 million provided in the supplemental appropriations bill for FY 85 and the $18 million in FY 86 will be used to continue county road relocation and start construction of the main dam. These funds will satisfy our requirement through FY 87. The main dam contract was awarded last month for $62.8 million.

## MOUNT ST. HELENS

Construction of the permanent outlet for Spirit Lake at Mount St. Helens in Washington was completed in April 1985 and the lake draw down to a permanent safe level was completed in September 1985.

Material eroded from the 3 billion cubic yard mudflow resulting from the mountain's eruption continues to deposit in the Toutle, Cowlitz and Columbia Rivers. PL 98-63 authorized the Corps to provide flood protection in the developed areas on the Cowlitz River against a 100-year event. Flood protection is currently being provided by temporary emergency levee structures which were constructed in fall 1982, and dredging in the Cowlitz and Toutle rivers to remove sediment deposition, with disposal areas provided by the State of Washington. The temporary structures provide protection against a single short-duration flood. Evacuation of residents from the flood plain would be required prior to the water encroaching on these temporary structures.

A feasibility report on a permanent solution to the sediment problem was submitted to Congress in November 1985. The report recommends construction of a single sediment retention structure at the Green River site on the North Fork Toutle River, minimal levee improvements at Kelso, Washington, and dredging downstream from the sediment retention structure during construction of the structure and when the impoundment area has filled and sediment begins to pass over the spillway.

Letters of assurance have been received from the State of Washington, Cowlitz County and the local diking district concurring in non-Federal cost sharing provisions authorized in PL 99-88. FY 87 funds will provide for initiation of the Mount St. Helens Sediment Control project.

## PL 99 WORK

Oakley Dam is a private irrigation dam located on Goose Creek in southern Idaho. In January 85, Governor Evans of Idaho requested Corps assistance to prevent imminent failure of the dam's outlet structure, which would have resulted in a disastrous flood downstream in the towns of Oakley and Burley. Under its Advance Measures program, the Corps designed and constructed emergency repairs. The outlet was ready for discharge of excess water nine weeks after receipt of the Governor's request at a cost of $227,500.

An Advance Measures project to protect the city of Salmon, Idaho from ice jam flooding was also constructed during January and February 85. The city is located at the confluence of the Salmon and Lemhi Rivers. The levees along these rivers were raised and strengthened in time to prevent a recurrence of the heavy flood damage that occurred in the winter of 1984.

## NAVIGATION

The North Pacific Division has more than 105 authorized navigation projects including 27 small boat harbors in Alaska. These projects provide more than 1,000 miles of navigable waterways to transport our nation's commerce and to provide for commercial fishing and recreational activities. Our FY 87 program includes funds for 36 navigation projects.

### DREDGING ACCOMPLISHMENTS

The Corps of Engineers has reduced its fleet of hopper dredges to a minimum fleet of four as prescribed by PL 95-269. This law requires the Corps to set aside an amount of work each year necessary to keep the minimum fleet fully operational, and the dredges must be ready to respond immediately to national defense and emergency work.

The North Pacific Division operates two of these dredges, the ESSAYONS and YAQUINA. During FY 85 they worked a total of 441 days and removed 10.2 million cubic yards of material from our rivers and harbors. And just as important, last fiscal year the ESSAYONS successfully completed a national defense dredging assignment for the U.S. Navy at Alameda Naval Air Station, California. The ESSAYONS removed about 350,000 cubic yards of material to provide adequate channel depths for the vessels assigned to that area.

### OREGON COASTAL HARBORS

In FY 85, the dredge YAQUINA was very successful in maintaining Oregon coastal projects. Several factors contributed to this success: Improvements to the jetty systems at both the Siuslaw and the Umpqua projects and installation of pile dikes at Rogue River reduced our maintenance dredging workload. In addition, shoaling caused by spring and summer storms has been less than normal. Also, the dredge YAQUINA has proven to be a very effective and efficient dredge in these projects.

Last year the YAQUINA worked in the five shallow draft projects (Umpqua River, Siuslaw River, Coquille River, Chetco River, and Rogue River) about 80 days and removed more than 650,000 cubic yards of material.

### SIUSLAW JETTY EXTENSIONS

The Siuslaw River in Oregon flows into the Pacific Ocean 160 miles south of the mouth of the Columbia. The Corps has maintained an 18-foot-deep channel across the bar since 1968. To reduce shoaling and breaking waves in the channel, construction was initiated in FY 83 to extend the north jetty by 1,900 feet and the south jetty by 2,300 feet. In addition, two 400-foot spur jetties were constructed. The project was completed in October 1985--under budget and almost a year ahead of schedule.

### SECTION 107 PROGRAM

The Section 107 Small Navigation Projects program has continued to be very active. In FY 85 a project to increase depths into the small boat basin at Ilwaco, Washington was completed except for seeding of the dredge material disposal site which will be accomplished in FY 86.

In FY 86, construction is scheduled to provide a breakwater to protect the boat beaching area at Mekoryuk, Alaska and to provide a deep-draft turning basin on the Columbia River at Kalama, Washington. In FY 86, work is continuing on preparation of plans and specifications for constructing new small boat harbors at Seward and Saxman, Alaska, and for enlarging the small boat basin at Juneau, Alaska. Preparation of plans and specifications will begin for a project to improve the small boat harbor at Dillingham, Alaska. Reconnaissance and detailed project studies are underway for additional locations in Alaska, Washington, Oregon and Idaho.

## NAVIGATION CHANNEL BELOW ICE HARBOR DAM

During discharges from Ice Harbor Dam of more than about 60,000 cubic feet per second, severe crosscurrents and high velocities are a problem in the navigation channel just downstream of the project. These currents, with the present channel width, create a substantial safety hazard to downbound river navigation. This requires them to proceed in one-barge tows much of the time, causing delays at the lock.

The crosscurrents are a result of the relatively shallow depth of the river channel downstream of the Ice Harbor powerhouse and spillway, and a channel bottom configuration that directs flow across the river into the navigation channel. The conditions are aggravated by increased flow velocities when the McNary reservoir downstream is operated at minimum pool elevation of 335 feet, an occurrence that is expected to become more prevalent in the future.

To solve this problem, the channel is being widened 100 feet on the riverward side for 2,700 feet downstream of the Ice Harbor guidewall. This will have no impact on currents, but should provide more maneuvering room for tows and allow tugs to handle larger tows without danger of running aground on the land side. A $7 million contract for the work was awarded in November 85 and is now about 65 percent complete with completion scheduled for April 86.

## NEW BONNEVILLE LOCK

The navigation lock at Bonneville Dam, completed in 1937, was the first major navigation lock on the Columbia River system and is the most heavily used. Because it is smaller than the locks at the seven upstream projects, it requires the breakup of normal tows, causing even more lockages. The time required for these additional lockages limits the total traffic through the lock. This bottleneck will be eliminated by a new 86-foot-wide by 675-foot-long lock which will be compatible with the upstream projects.

Planning and engineering studies were essentially completed in FY 85. Plans and specifications are underway for a railroad relocation contract scheduled for award in FY 86. Design of the navigation lock is continuing with a contract award set for FY 88 and lock completion scheduled in 1992.

## NAVIGATION GENERAL INVESTIGATIONS SUMMARY

The FY 87 budget request contains $2,383,000 to initiate three Navigation studies, consisting of the reconnaissance phase for two surveys (which will be completed) and one Continuation of Planning and Engineering study; to continue two Navigation studies, comprising one survey and one Continuation of Planning and Engineering study; and to complete two Navigation studies, including one interim survey and one Continuation of Planning and Engineering studies.

During FY 86, General Investigations funds will continue four Navigation studies, including two surveys and two Continuation of Planning and Engineering studies.

## GRAYS HARBOR AND CHEHALIS RIVER, HOQUIAM RIVER

The improvements to the existing deep draft navigation project at Grays Harbor, Washington will result in substantial transportation savings estimated to exceed $15 million annually. The proposed plan of improvement provides for deepening and widening 24.3 miles of the existing 30-foot Federal project from ocean transition to the harbor and river terminals, dredged material disposal in harbor and ocean open-water sites, replacement of the Union Pacific Railroad Co. bridges at Aberdeen, construction of two new turning basins, and crab mitigation.

Planning and engineering studies will be essentially completed in September 87.

## EAST, WEST, AND DUWAMISH WATERWAYS

Deep-draft channel improvements to the Federal project at Seattle Harbor, Washington, including replacement of a constrictive Burlington Northern Railroad bridge, would result in increased safety and transportation savings of $11.7 million annually to large ocean-going ships serving Puget Sound.

FY 86 funds are being used to continue planning and engineering studies. As work progressed on planning and engineering studies in FY 85, it was found that a substantially more complex environmental condition existed than was originally presented in the Feasibility Report. As a result, the studies have been expanded to include an in-depth evaluation of sediment containment, to determine proper disposal methods, and to design proper disposal areas.

Efforts are underway on the Puget Sound Dredged Disposal Analysis that will benefit the East, West, and Duwamish Waterways (EWDWW) studies by performing investigations pertaining to similar conditions existing in EWDWW. This will result in some cost savings to the EWDWW planning and engineer program; however, other additional effort required to perform the rescoped studies has increased the costs and delayed completion to March 90.

FY 87 funds will continue work on contaminated sediment mobility studies; channel, bulkhead, and railroad bridge design; and EIS supplement, and economic studies.

## OLYMPIA HARBOR, WASHINGTON

Olympia Harbor is located on the southern shore of Puget Sound at Olympia, Washington. The Port of Olympia is experiencing dramatic growth in waterborne commerce and presently handles about 1 million tons of commerce--mostly logs and wood products shipped to Pacific Rim nations. Recent trends indicate that trade will continue to increase and become more diversified.

The harbor is divided into East Bay and West Bay by a port-constructed peninsula. The 500-foot-wide by 30-foot-deep West Bay channel dredged by the Corps in 1939 is not adequate for world fleet vessels that call on the harbor. A study completed by the port in 1984 projects continued growth in commerce and a need for channel and turning basin deepening in West Bay.

FY 87 funds would be used to initiate and complete a reconnaisance study and report at full Federal expense. Further feasibility studies would depend on findings of the reconnaissance study and reaching an agreement with a non-Federal sponsor willing to share 50 percent of the feasibility study costs.

## BELLINGHAM HARBOR, WASHINGTON

At Bellingham, Washington on the northeastern shore of Puget Sound, a new study will be initiated to determine whether the existing Whatcom Creek Waterway should be deepened as requested by the Port of Bellingham. About two million tons of commerce are handled annually by the Port--mostly log shipments and ore and mineral imports. Vessels calling at the port draft 33 feet--exceeding the existing 30 foot channel depth. They are delayed while mooring on the tides and incur higher transportation costs. Vessel drafts are expected to increase to 39 feet in the future.

FY 87 funds will be used to initiate and complete a reconnaissance study and report at full Federal expense. Further feasibility studies would depend on findings of the reconnaissance study and reaching agreement with a non-Federal sponsor willing to share 50 percent of the feasibility study costs.

## ST. PAUL ISLAND HARBOR, ALASKA

St. Paul is the northernmost island of the Pribilof Island group which is located adjacent to fertile groundfishing resources as well as potential oil and gas fields of the Norton, St. George, North Aleutian, and Navarin Basins. A Feasibility Report submitted to the Secretary of the Army in August 83 recommended construction of navigation improvements at St. Paul, including a 1,800-foot-long breakwater, an entrance channel, a maneuvering area, and a mooring area to service existing commercial and subsistence fishing fleets. The recommended project would cost about $24.8 million.

The City of St. Paul has reiterated its support and sponsorship as recently as October 85, urging early completion of the project. FY 87 funds would be used to initiate engineering, economic, and environmental studies, including model studies of the breakwater.

## SOUTH CENTRAL REGION, ALASKA

The South Central Region includes all of Cook Inlet, Prince William Sound and the Gulf of Alaska from Yakutat opposite the north-south border with Canada to Dutch Harbor on Unalaska Island of the Aleutian Islands. Recent accelerated economic development of Alaskan resources has placed increasing demands on harbor facilities in the region. Further development of resources, such as potential oil fields in Lower Cook Inlet and expansion of the fishing industry, is expected to result in a need for increased deep draft navigation improvements. Current studies are addressing shoaling problems in the approaches to Anchorage Harbor and the need for improvements in the harbor.

FY 87 funds would be used to complete detailed engineering, economic, and environmental studies, and a feasibility report in September 1987.

## RIVERS AND HARBORS IN ALASKA

The Comprehensive Rivers and Harbors in Alaska Study will identify current and future water resources problems and needs in Alaska in light of vast physical and economic changes being experienced within the state. Changes such as the growth and development of the mining and fishing industries have accelerated the need for low-cost power, water supply, flood damage reduction, erosion control, navigation improvements, fish and wildlife enhancement, and recreational development.

Especially significant is the impact of the Fisheries Conservation and Management Act which established the 200-mile fisheries conservation zone. This has been a boon to U.S. fishermen, who are dramatically increasing their fishing fleets and take of bottomfish within the zone, resulting in the need for new and expanded harbors. These needs are being addressed by a series of bottomfishing interim studies.

Other interims include Coastal Oil and Gas, S.E. Harbors of Refuge, Coastal Erosion, Mineral Development Navigation Improvements, and Western General Cargo Harbor Development.

FY 87 funds will be used to complete studies and a draft interim feasibility report addressing the need for navigation improvements at Bristol Bay. In addition, studies will be continued on the Coastal Oil and Gas, Coastal Erosion, Harbors of Refuge, and Western General Cargo interims.

## PUGET SOUND DREDGED DISPOSAL ANALYSIS

In April 85, the Corps began the Puget Sound Dredged Disposal Analysis (PSSDA) study--a joint, cooperative effort with the U.S. Environmental Protection Agengy and the State of Washington to identify acceptable dredged material disposal sites in waters of Puget Sound.

On the average, approximately 1 million cubic yards of mostly clean sediments are dredged from Puget Sound harbors each year. Unconfined open water disposal, while significantly less expensive than other modes of disposal, has in the last several years encountered resistance due to public concerns over contaminated sediments which are found in some harbor areas.

The study is scheduled to be completed in FY 88. Public meetings were held in FY 85 and technical studies initiated to confirm and/or establish new environmentally safe deep-water disposal sites. Site selection will occur in FY 86 for the Seattle-Tacoma-Everett central region with sites for the balance of the sound identified in FY 87. Sediment testing and test evaluation procedures are also being addressed and site management plans formulated to insure that environmental resources and public health are adequately protected. Environmental groups, Indian Tribes, local governments, Puget Sound ports, marine scientists and other interests are actively participating in PSDDA study activities, which are being closely coordinated with EPA's ongoing Puget Sound Estuary Program and the State of Washington's Puget Sound Water Quality Authority sound-wide planning program.

## MOBILIZATION ACTIVITIES

Mobilization readiness is recognized as one of the Corps' most important responsibilities. Our civil works program, together with our military design and construction mission, keeps a strategic reserve of engineers, both uniformed and civilians, trained in managing large construction projects should the nation ever have to mobilize in a national emergency.

That strategic reserve cadre across the U.S. and overseas also provides a "bank" of engineer-related skills that can be drawn upon in times of natural as well as national emergency. An excellent example of this principle in action was the Corps' response to the eruption of Mount St. Helens, where quick and effective action helped reduce human suffering and restore vital services to the stricken western Washington area.

In addition to performing our normal civil works mission, the Corps also engages in mobilization planning and training, and conducts mobilization exercises to test our readiness to respond to emergencies.

## SUMMARY

The FY 87 program of $262,608,000 for the North Pacific Division is a ten percent decrease from the $290,540,000 allocated for the current fiscal year ending next September 30. Construction General accounts for $99,300,000; Operation and Maintenance for $155,242,000; and General Investigations for $8,066,000.

### JUSTIFICATION MATERIAL

Mr. **Bevill**. Thank you. We will insert the justification material for the North Pacific Division in the record at this point, without objection.

[The justifications follow:]

## Justification of Estimates for Civil Functions Activities
## Department of the Army, Corps of Engineers
## Fiscal Year 1987
## SUMMARY NORTH PACIFIC DIVISION

| | FY 1986 Allocations $ | FY 1987 Request $ | Increase or Decrease $ |
|---|---|---|---|
| General Investigations | | | |
| Surveys including Phase I Stage of AE&D | 6,888,000 | 5,999,000 | -889,000 |
| Continuation of Planning and Engineering | 2,531,000 | 2,067,000 | -464,000 |
| Advance Engineering and Design | 2,000,000 | 0 | -2,000,000 |
| Construction, General | | | |
| Construction | 121,319,000 1/ | 95,300,000 2/ | -26,019,000 |
| Major Rehabilitation (Continuing) and Dam Safety Assurance | 3,802,000 | 4,000,000 | +198,000 |
| Operation and Maintenance, General | | | |
| Project Operations and Maintenance | 149,100,000 | 151,342,000 | +2,242,000 |
| Major Rehabilitation (Continuing) | 4,900,000 | 3,900,000 | -1,000,000 |
| TOTAL | 290,540,000 3/ | 262,608,000 | -27,932,000 |

1/ Includes $4,000,000 to be derived from the Inland Waterways Trust Fund. -

2/ Includes $10,000,000 to be derived from the Inland Waterways Trust Fund.

3/ Does not reflect reduction required by the Balanced Budget and Emergency Deficit Control Act of 1985 (Public Law 99-177).

APPROPRIATION TITLE: General Investigations, FY 1987 North Pacific Division

| Study | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ |

1. SURVEYS - NEW

a. Navigation Studies: The amount of $300,000 is requested in Fiscal Year 1987 to initiate and complete two navigation reconnaissance studies.

Washington

| Study | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| Bellingham Harbor | 150,000 | 0 | 0 | 150,000 | 0 |

Bellingham, Washington is a port city with a population of 46,000 located on the northeastern shore of Puget Sound. The Port of Bellingham handles about 2 million tons of commerce annually, including log shipments and ore and mineral imports, through four existing Federal navigation projects in Bellingham Harbor. The Port has requested deepening of Whatcom Creek Waterway to accommodate the larger vessels serving Pacific Rim operations. Because current vessel drafts of 33 feet are greater than the existing 30-foot channel depth, ships moor on the tides and are delayed, thereby limiting commodity movement through the port. Despite delays, vessel traffic in 1982 increased by 25 percent over the previous 10 years. Vessel drafts are expected to increase to 39 feet in the future. This will cause vessels to light load or experience additional delays.

Fiscal Year 1987 funds will be used to initiate and complete the reconnaissance phase study at full Federal expense to determine the Federal interest in deepening Whatcom Creek Waterway. The need for any navigation improvements in other areas of the harbor will also be evaluated. This study is scheduled for completion in September 1987.

| Study | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| Olympia Harbor | 150,000 | 0 | 0 | 150,000 | 0 |

Olympia, Washington, the state capitol, is a city of 29,000 population located on the southern shore of Puget Sound with port facilities serving trade with the Pacific Rim nations. Approximately 1 million tons of commerce, mostly timber products, are presently handled at the Port of Olympia annually . However, the Port is actively expanding and diversifying its present waterborne commerce. The harbor is divided into East Bay and West Bay (Federal channel dredged to 500 feet wide by 30 feet deep in 1939) by a Port-constructed peninsula. The current Federal project dimensions are inadequate for the world fleet of vessels that call on the Port of Olympia and a five-year plan, completed by the Port in February 1984, indicates a continued growth in commerce and need for channel and turning basin deepening in West Bay. Accordingly, the Port has requested the Federal study to address these navigation problems, including the need for any improvements on East Bay.

| Study | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ |

1a. Navigation Studies: Washington, Olympia Harbor (Cont'd)

Fiscal Year 1987 funds will be used to initiate and complete the reconnaissance phase study at full Federal expense. This study is scheduled for completion in September 1987.

1b. Flood Damage Prevention Studies: None

1c. Shoreline Protection Studies: None

1d. Special Studies: None

1e. Comprehensive Studies: None

1f. Project Review Studies: None

| | | | | | |
|---|---|---|---|---|---|
| TOTAL SURVEYS - NEW | 300 | 0 | 0 | 300 | 0 |

2. SURVEYS - CONTINUING

a. Navigation Studies: The amount of $163,000 is requested to continue one navigation study and complete one interim report during Fiscal Year 1987.

Alaska

| | | | | | |
|---|---|---|---|---|---|
| Southcentral Region | 2,015,000 | 1,457,000 | 200,000 | 163,000 | 195,000 |

The purpose of this study is to provide an overall plan for necessary developments to fulfill existing and prospective deep-draft navigational needs within Southcentral Alaska. The study area includes that portion of Alaska which drains into Cook Inlet and into the Gulf of Alaska. This Southcentral region is served by several ports, rail and highway, and is crossed by the Trans-Alaska Pipeline. Key ports include Anchorage (the State's largest city and principal seaport), Whittier, Seward, Valdez, Cordova, Homer, Kenai, Yakutat and Kodiak. Recent accelerated economic development of Alaskan resources has placed increasing demands on the harbor facilities within the study area. Improvement of these facilities and/or new facilities is necessary. Production and development of coal and other mineral resources and expansion of the fishing industry is expected to result in greatly increased deep-draft vessel traffic to the region, further stressing

| Study | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ |

2a. Navigation Studies: Alaska, Southcentral Region (Cont'd)

existing harbors. A regional report completed in 1981 included preliminary studies of current harbor and shipping problems, adequacy of facilities, delays and problems in intermodel transfers, channel dimensions, and other physical and economic aspects affecting needed deep-draft navigation improvements. Preliminary studies at Kodiak revealed a need for substantial improvements in mooring and cargo handling facilities, and found that Federal breakwater improvements appeared economically justified. Due to the collapse of the king crab resource in 1983, transshipment of goods through Kodiak has decreased; consequently, the interim study was deferred. Presently at Anchorage Harbor, deep-draft vessels are unable to enter or leave the harbor at low tide. Further, the migration of Fire Island Shoal in Cook Inlet is forcing vessels entering Anchorage away from the marked channel, rendering the existing aids to navigation less than fully effective. The City of Anchorage and shippers have expressed grave concern over the deteriorating navigation conditions. A Fire Island Shoal Technical Report was completed by the Alaska District Engineer in January 1986. It concluded that the shoal appears to be dissipating, but should be monitored periodically to verify its location and rate of movement so that non-structural measures (e.g. relocation of navigation aids) can be taken if the shoal becomes a hazard to navigation.

FY 1986 funds are being used to continue sedimentation studies in Upper Cook Inlet which affect the Port of Anchorage. This includes completing a review of sedimentation in the inlet and evaluating historical hydrographic charts. The information will be analyzed for trends to predict future sedimentation problems. Economic evaluation of Anchorage compared to existing ports, as well as future alternate ports, will be continued. Alternative navigation improvements to reduce the maintenance dredging costs at Anchorage harbor will be evaluated.

FY 1987 funds for the Anchorage Interim Study will be used to complete engineering, economic, and environmental analyses of the navigation needs and complete the report of the Division Engineer by September 1987.

| | | | | | |
|---|---|---|---|---|---|
| SUB-TOTAL CONTINUING NAVIGATION STUDIES | 2,015,000 | 1,457,000 | 200,000 | 163,000 | 195,000 |

2b. Flood Damage Prevention Studies: The amount of $4,807,000 is requested to continue fifteen and complete five flood damage prevention studies in FY 1987.

| Study | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ |
| 2b. Flood Damage Prevention Studies: Alaska (Cont'd) | | | | | |
| Alaska | | | | | |
| Homer Spit Erosion | 802,000 | 365,000 | 140,000 | 297,000 | -0- |

The study area is located in Southcentral Alaska, on Lower Cook Inlet about 200 miles south of Anchorage. Homer Spit contains the economic heart of the City of Homer, including a 50-acre small boat harbor completed in 1984, a thriving deep water port, a fuel storage facility, commercial fish processing plants, and miles of heavily used recreational beaches. The spit highway has suffered from significant erosion problems and has been cut on several occasions since the 1964 earthquake which caused subsidance of the area. The State of Alaska has spent more than $6 million on four major repair efforts since 1966, most recently for an interim repair in 1982 which was severely damaged almost immediately. The State's efforts have been essentially remedial rather than being directed toward a long-term solution. Without a long-term solution, the highway and the commercial center on the spit are under a constant threat of erosion which could even sever these facilities from the mainland. This study is addressing the major coastal hydraulic processes affecting Homer Spit and long-term solutions to the erosion problems.

FY 1985 funds were used to fully fund the reconnaissance phase at full Federal expense. The feasibility phase is being initiated in FY 1986 upon agreement by the local sponsor to share 50 percent of the costs of the feasibility phase. FY 1986 funds would be used to analyze alternative plans, including further economic studies and an analysis of littoral drift processes. The funds requested for FY 1987 will be used to complete the Federal share of the feasibility phase of study. Work will include additional hydraulic and hydrologic investigations, including model studies, preparing feasibility scope designs for alternative solutions, performing environmental impact analyses, and completion of the feasibility report. The estimated cost of the feasibility phase is $894,000. The overall study cost increased $264,000 from $975,000 to $1,239,000 due to the need for more extensive geotechnical and hydrographic investigations and technical analyses identified in the Plan of Study (completed December 1985) for conducting the feasibility phase. A summary of study cost sharing is as follows:

| | |
|---|---|
| Total Estimated Study Cost | $1,239,000 |
| Reconnaissance Phase (Federal) | 345,000 |
| Feasibility Phase (Federal) | 457,000 |
| Feasibility Phase (Non-Federal) | 437,000 |

The reconnaissance phase will be completed in March 1986. The feasibility study and Division Engineer's report are scheduled for completion in March 1988.

| Study | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ |
| 2b. Flood Damage Prevention Studies: Alaska (Cont'd) | | | | | |
| Rivers and Harbors in Alaska | 9,620,000 | 2,[illegible]1,000 | 1,096,000 | 946,000 | 4,727,000 |

Vast physical and economic changes being experienced in Alaska [illegible] resulted in numerous existing and potential water resource problems, which are centered in a few key areas of the State. These changes include growth in mineral, coal and oil exploration and extraction, development and diversification of the fishing industry to harvest the bottomfish resource, changed timber harvesting practices, development of large scale agriculture, natural resources export to Pacific Rim nations, and increases in population, and tourism. As a result there is an accelerated need for low-cost power, navigation improvements, additional water supply, shore and bank protection, and flood damage reduction. The purpose of this study is to identify these current and potential future water resource problems and needs, and to develop alternative plans to address them. American fishing vessels continue to increase their share of the bottomfish harvest within the 200-mile fisheries conservation zone, and are placing additional demands for services provided by existing harbors. The need for navigation improvements is being addressed by a series of interim bottomfish studies. Also, an interim study of potential navigation improvements is underway for the Yukon-Kuskokwim Rivers. Isolated communities on the rivers are heavily dependent on delivery of fuel and other essential goods by water, since no roads exist in most areas. These improvements could also aid in the development of valuable resources such as timber and minerals. In the Bristol Bay region, an interim study is underway to determine the feasibility of needed harbor and channel improvements in the area to serve the commercial fishing fleets and other economic activities. Statewide, the Coastal Oil and Gas Harbors Interim Study will focus on navigation improvements to enable less costly transportation of energy resources including oil, gas, and coal. Coastal erosion problems at numerous Alaskan communities are being addressed in the Coastal Erosion Interim. Harbor and navigation safety needs are being evaluated in the Southeast Alaska Harbors of Refuge Interim Study. Mineral exploration and development is occurring throughout Alaska, especially in the western area of the State where development is dependent on water transportation. The Mineral Development Navigation Improvements Interim will consider the associated navigation needs. Western Alaska is also dependent upon water transportation for general cargo. The Western General Cargo Harbor Development Interim will investigate navigation improvements and harbor development for general cargo.

Three Bottomfish Interims were completed or deferred in FY 85. The False Pass Navigation Improvements Interim considered two alternative solutions for maintaining an improved shipping channel, but concluded that an improved channel did not appear economically feasible. Public notice of the unfavorable letter report was issued in October 1985. Under the Atka Interim, two economically feasible harbor improvement plans were identified. The plan preferred by local residents consists of an 8-acre, naturally sheltered harbor. If studies indicate a breakwater is unnecessary, this plan would not require Federal involvement. The Yakutat Interim examined the need for a 5-acre protected harbor, but study was deferred in June 1985 as there was no Federal interest at this time since existing and planned navigation facilities are adequate to meet near-term needs in the area.

| Study | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ |

2b. Flood Damage Prevention Studies: Alaska, Rivers and Harbors in Alaska (Cont'd)

FY 1986 funds are being used to complete Akutan/Unalaska and King Cove Bottomfish Interim Studies. The Coastal Oil and Gas Harbors Interim of the Comprehensive Study will be continued with evaluation of potential navigation improvements for coal export, as well as data collection and engineering and economic analysis of petroleum transportation. Also, plan formulation analyses of alternative plans for navigation improvements on the Yukon and Kuskokwim Rivers and a final report will be completed. For the Bristol Bay Harbors, engineering, economic and environmental evaluations of potential harbor and channel improvements to aid commercial fishing and other resource development will continue. The Southeast Alaska Harbors of Refuge and Coastal Erosion Interims are being resumed in FY 1986 using funds from the deferred bottomfish interims. For the Southeast Region, the locations of potential harbors of refuge will be investigated. For the Coastal Erosion Interim, work will be concentrated on the communities of Larsen Bay, Ouzinkie, Egegik, Clarks Point, Port Heiden, Dillingham, Karluk, and Naknek as well as others impacted by coastal erosion.

FY 1987 funds will be used to continue engineering and economic analysis of identified harbor and channel improvements of the Bristol Bay Harbors Interim, including preparation of a draft feasibility report. Also, under the Coastal Oil and Gas Harbors Interim engineering, economic, and environmental work will continue on coastal navigation improvements to support coal export and petroleum transportation. Data collection and economic evaluations will continue on potential sites for Southeast Alaska harbors of refuge and communities impacted by coastal erosion. Work on the Mineral Development Navigation Improvements and Western General Cargo Harbor Development Interims will continue and concentrate on identification of both existing and future needs. The City of Nome is one harbor site identified early in the Western General Cargo investigation.

The overall study report of the Division Engineer is scheduled for completion in November 1991. Interim reports are scheduled as follows:

| Study | Completion Schedule |
|---|---|
| Comprehensive Studies: | |
| Yukon-Kuskokwim Navigation | Nov 1986 |
| Bristol Bay Harbors | Sep 1988 |
| Coastal Oil and Gas Harbors | Oct 1989 |
| S.E. Alaska Harbors of Refuge | Mar 1989 |
| Coastal Erosion | Mar 1990 |
| Mineral Development Navigation Improvements | Nov 1990 |
| Western General Cargo Harbor Development | Nov 1990 |

| Study | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ |

2b. Flood Damage Prevention Studies: Alaska, Rivers and Harbors in Alaska (Cont'd)

| Study | Completion Schedule |
|---|---|
| Bottomfish Studies: | |
| Akutan/Unalaska | Nov 1986 |
| King Cove | Nov 1986 |

Idaho

| | | | | | |
|---|---|---|---|---|---|
| Columbia River & Tributaries (Also MT, OR, WA, & WY) | 22,122,000 | 15,526,000 | 1,752,000 | 1,809,000 | 3,035,000 |

The Columbia River drains an area of 259,000 square miles in Northwestern United States and Southwestern Canada. About 15 percent, or 39,500 square miles, lies in British Columbia. From its source in Columbia Lake, British Columbia, the river flows over 1,200 miles in its southwestward course to the Pacific Ocean. The total mean annual runoff is about 200 million acre-feet; the Canadian portion contributes about 50 million acre-feet.

The resources of the Columbia River have been developed to meet growing and changing needs of the Pacific Northwest. Continued growth of the Pacific Northwest has increased demands for consumptive and non-consumptive uses of the river. These multi-purpose uses include: hydropower generation, irrigation water, inland navigation, flood damage reduction, and water-oriented recreation. In recent years, increased interest in the provision of adequate passage for anadromous fish and in environmental issues has placed additional demands on the use of resources of the Columbia River and its major tributaries. Passage of the Pacific Northwest Electric Power Planning and Conservation Act (P.L. 96-501) created the Northwest Power Planning Council and directed it to develop regional plans and programs related to electric energy conservation, renewable resources, other resources, and protecting, mitigating, and enhancing fish and wildlife resources of the Columbia River and its major tributaries. Many of the projects of the Columbia River Basin were authorized or licensed thirty or more years ago. However, as the needs of the Pacific Northwest change, it should be determined whether the Columbia River System, as presently developed and operated, still meets present and future needs. Many Columbia River Basin projects were authorized, constructed and have been operated principally for power, navigation and flood damage reduction. Until recently, the existing hydropower system served mainly base-load energy needs causing less significant fluctuations in river flows. However, recent developments, such as the Pacific Northwest Electric Power Planning and Conservation Act, the Columbia River Treaty with Canada, the Northwest-Southwest high voltage intertie, and the regional hydro-thermal power program, are creating awareness of a need to consider changing

| Study | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ |

2b. Flood Damage Prevention Studies: Idaho, Columbia River & Tributaries (A T, OR, WA, and WY) (Cont'd)

the manner in which existing projects are operated. With the growing demand for water from the Columbia River System for both consumptive and non-consumptive uses, the adequacy of basin storage should be reviewed. Studies to date indicate that with the present level of development which provides about 43.5 million acre-feet of storage, it will become increasingly difficult to fully meet the growing multiple-purpose needs of the region from available Columbia River water resources.

While numerous river and harbor projects have been constructed to date, there is a need for a long-range comprehensive plan for the Columbia River system to identify current and future water resource problems and needs and to develop alternative solutions. The purpose of this study is to develop such a plan, including a priority ranking of further Corps activities and, as appropriate, to recommend projects for implementation, so that the region's water resource needs can be met through effective multi-purpose management of its resources.

To date, system operational studies have been completed on river conditions expected within the next five to ten years. Those studies, along with recently completed needs assessments, will provide the basis for formulation of a System Plan for the Columbia River and its major tributaries. To address urgent needs of the system, selected feasibility studies have been initiated and completed including: addition of power at Libby Reregulating Dam, MT; McNary 2nd Powerhouse, WA-OR; Bonneville Navigation Lock Replacement, WA-OR; adding power generation at Lucky Peak Dam, ID, Blue River Dam, OR & Fall Creek Dam, OR; flood damage reduction for the Yakima River at Union Gap, WA and for the Rivergate North Portland Area, OR; and additional project purposes for McNary Dam, WA-OR.

During FY 1986, system planning is continuing leading to the identification of conceptual alternative plans for future operation, management, and use of the Columbia River and its major tributaries. System planning will include continued coordination with Federal, State and local agencies and the Northwest Power Planning Council to further define regional needs. The following project feasibility studies will continue: development of navigation in the middle Columbia River, WA; development of multiple-purpose projects in the Clearwater River Basin, ID; development of a multiple-purpose project in the Columbia River Basin on the Similkameen River, WA; and evaluation of the flood potential and condition of the existing levee system(s) along the lower Columbia River, OR and WA. Similkameen River is an element of the Columbia River Basin Project Review Interim.

During FY 1987, detailed feasibility study of multiple purpose project development in the Clearwater River Basin, ID will be completed. Development of the System Plan will be continued with emphasis placed on evaluating the conceptual

4 FEB 1986

| Study | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ |

2b. Flood Damage Prevention Studies: Idaho, Columbia River & Tributaries (Also MT, OR, WA, and WY) (Cont'd)

alternative plans developed in FY 1986. In addition, resource assessments and detailed studies will be made on measures necessary to insure that multi-purpose considerations are reflected in the Northwest Power Planning Council's Plans. Detailed feasibility studies will be continued on Middle Columbia River Navigation, WA; and resumed on multiple purpose project development at Fitzgerald Falls on St. Joe River. Fitzgerald Falls is also an element of the Columbia River Basin Project Review Interim. Detailed investigations of flooding problems along the Lower Columbia River will be continued. Detailed feasibility studies will be completed and a draft feasibility report and EIS will be prepared on the Similkameen River.

Interim reports are scheduled for:

| Study | Completion Schedule | |
|---|---|---|
| System Plan | November | 1988 |
| Clearwater River Basin Multiple-Purpose | November | 1987 |
| Middle Columbia River Navigation | November | 1988 |
| Lower Columbia River Flood Control | May | 1989 |
| Columbia River Basin Project Review | November | 1992 |

| | | | | | |
|---|---|---|---|---|---|
| Upper Snake River and Tributaries (Also WY) | 8,283,000 | 4,854,000 | 987,000 | 836,000 | 1,606,000 |

Upper Snake River and Tributaries extends from the headwaters of Snake River in Wyoming down to and including Weiser River in Idaho, a distance of about 400 miles. The watershed includes about 73,000 square miles, most of the area being in southern Idaho. Current water resource problems and opportunities are associated with uses of surface and groundwater resources in the interest of flood damage reduction, water quality, hydropower, irrigation, public water supply, fish and wildlife, and recreation. Power demand in southern Idaho has grown due to new irrigation development requiring high-lift pumping, conversion of irrigation systems to sprinklers, and growth in the food and phosphate processing industries. Another major concern is the prospect of lower flows in Snake River resulting from projected irrigation development. The Idaho Department of Water Resources (IDWR) has concluded that storage for power generation and streamflow maintenance should be a priority consideration. There are five interim studies actively underway in FY

| Study | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ |

2b. Flood Damage Prevention Studies: Idaho, Upper Snake River & Tributaries (Also WY) (Cont'd)

1986 which are addressing the water resources nee[illegible] the Upper Snake River including: Owyhee River Basin, Portneuf River Basin, Weiser River Basin, Snake River in Wyoming (formerly named Wyoming Tributaries) and Big Lost River. The report of the Division Engineer for Weiser River Basin is scheduled for November 1986. FY 1987 funds will be used to complete Owyhee River Basin and Continue studies on Portneuf River Basin, Snake River in Wyoming and Big Lost River.

OWYHEE RIVER BASIN: IDWR requested that the potential for a storage project near the Duck Valley Indian Reservation be investigated. Studies were resumed in FY 1985 using funds from the Offstream Storage Interim Study which has been deferred. Storage in this basin could reduce flood damages, provide irrigation water, augment flows for fish and generate hydropower. FY 1986 funds are being used to complete the preliminary studies and initiate detailed studies. FY 1987 funds will be used to complete detailed studies and prepare a feasibility report and EIS. Completion of the Owyhee River Basin Interim report by the Division Engineer is scheduled for November 1987.

PORTNEUF RIVER BASIN: At the request of the IDWR, preliminary investigation of multipurpose storage was resumed in FY 1983 and continued in FY 1985. Project development will address flooding problems affecting the residential and commercial areas of Pocatello, Inkom and Lava Hot Springs, ID. Fiscal Year 1985 funds were used to study three storage sites on Marsh Creek and one storage site on Portneuf River. All of the sites could be developed to reduce flood damages in the basin as well as provide irrigation water, generate hydropower, augment downstream flows for fish, and provide recreation opportunities. FY 1986 funds are being used to complete a preliminary report and initiate detailed studies. FY 1987 funds will be used for continuation of detailed studies evaluating alternatives identified in preliminary studies. Completion of the Portneuf River Basin Interim report by the Division Engineer is scheduled for September 1988.

SNAKE RIVER IN WYOMING: In response to a request from the State of Wyoming, Disaster and Civil Defense Division, the study was resumed in FY 1986 to address current water resource problems and opportunities, including flood damage mostly confined to flood plains near Jackson, Wyoming. In unrevetted reaches of the Snake River, the bank-full capacity is exceeded 5 out of every 6 years. As land in the Jackson Hole area continues to change from agricultural to residential, flood damages are expected to increase above the estimated average annual damages of $308,000 at October 1985 prices and conditions. FY 1986 funds are being used to conduct preliminary studies. These studies are emphasizing flood damage reduction, but are also considering other water resource needs in the study area. FY 1987 funds will be used to complete preliminary studies and initiate detailed studies. The Division Engineer's interim report is scheduled for November 1988.

| Study | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ |

2b. Flood Damage Prevention Studies: Idaho, Upper Snake River & Tributaries (Also WY) (Cont'd)

BIG LOST RIVER: In response to a request from the IDWR the Big Lost River Interim was resumed in FY 1986. High runoff in the past three years and an earthquake in 1983, which caused subsidence and increased flow from springs, caused a recent increase in flooding problems. The flood of May-July 1967 was the largest known event on the Big Lost River and overbank flows inundated about 7,000 acres. In addition, rising ground water flooded another 7,000 acres, damaged crops, and contaminated wells and flooded basements. Big Lost River Valley suffered damages of about $800,000 (October 1985 levels of prices and development) between the Cities of Chilly and Arco, ID. FY 1986 funds are being used to conduct preliminary studies of flooding and other water resource problems. FY 1987 funds will be used to complete the preliminary study report and initiate detailed studies of alternative solutions. The Big Lost River Interim Report of the Division Engineer is scheduled for April 1989.

The final basin report of the Division Engineer is scheduled for September 1990. Interim reports are scheduled as follows:

| Study | Completion Schedule |
|---|---|
| Weiser River Basin | November 1986 |
| Owyhee River Basin | November 1987 |
| Portneuf River Basin | September 1988 |
| Snake River in Wyoming | November 1988 |
| Big Lost River | April 1989 |

Oregon

| Study | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| Umpqua River and Tributaries | 2,286,000 | 727,000 | 480,000 | 565,000 | 514,000 |

Umpqua River Basin drains much of southwestern Oregon. From the middle 1970's to the early 1980's Douglas County, whose area is essentially equivalent to Umpqua River Basin, funded several studies by consultants to obtain information on the water resource needs of the county and to develop a water resource management program. As a result of those studies the county is actively pursuing construction of Galesville Dam on a tributary of the South Umpqua, using both county and Federal funding sources. The county recognizes that other dams are needed in order to satisfy unmet needs for flood damage reduction, irrigation, fish enhancement, municipal and industrial water supply, and hydropower. By a May 11, 1983 resolution, the Board of County Commissioners of Douglas County requested the Corps of Engineers reexamine the water resource needs in the Umpqua River Basin, with a view towards developing projects to meet those needs.

| Study | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ |

2b. Flood Damage Prevention Studies: Oregon, Umpqua River and Tributaries (Cont'd)

The major water resource needs in the Umpqua River Basin are located in the South Umpqua River Basin. Flood flows of the South Umpqua River damage the communities of Tiller, Days Creek, Canyonville, Winston, Dillard, Myrtle Creek, Roseburg and Melrose as well as many rural areas. Average annual flood damages are estimated to exceed $2,000,000 at October 1985 price levels. Also, depleted streamflows in the summer have created a need for approximately 25,000 acre-feet of stored water for irrigation, municipal, and industrial purposes before the year 2020. An additional 30,000 acre-feet of water is needed to augment low summer flows for instream uses. The warm and polluted summer flows have been identified by fishery agencies as the major factor inhibiting restoration of anadromous fish resources. The Board of County Commissioners of Douglas County in a letter dated September 13, 1985, has stated their strong support for the continuation of detailed studies and willingness to participate in construction cost-sharing.

FY 1986 funds are being used to conduct detailed assessments of flood control, fish enhancement, and water supply needs and initiate hydrologic studies. Collection of detailed environmental and fish and wildlife information will also begin. A notice of intent to prepare an environmental impact statement will be published, and coordination with Federal, State and local agencies and the public will continue. FY 1987 funds will be used for conducting detailed foundation and materials investigations, surveys, and to initiate design, hydrologic and economic studies on alternatives. Collection of environmental and fish and wildlife information will be continued and environmental impacts for each alternative identified. Public and agency coordination, plan formulation and study management will also be continued. The study is expected to result in recommendation of one or more multipurpose reservoirs. The Division Engineer's report is scheduled for September 1989.

Washington

| Study | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| Chehalis River and Tributaries | 2,931,000 | 2,677,000 | 160,000 | 94,000 | -0- |

The Chehalis River drains an area of 2,114 square miles in southwest Washington and empties into Grays Harbor. Wynoochee Dam, an existing Federal project at river mile 51.8 on the Wynoochee River, a tributary to the Chehalis River, provides flood damage reduction, municipal and industrial water supply, and recreation. Skookumchuck Dam, an existing private project completed by Pacific Power and Light in 1970 at river mile 21.9 on the Skookumchuck River, also a tributary of the Chehalis River, provides water supply for the 1.4 megawatt Centralia steam-electric generating plant and supplemental fishery flows. The communities of Hoquiam, Aberdeen, Cosmopolis, Chehalis, Centralia, Oakville, and about 20,000 acres of agricultural land along Chehalis River and its tributaries are subject to major flood damage and bank erosion. A recurrence of the January 1972 flood of record at 1985 conditions and prices, would result in an estimated $16.3 million in damages to the Aberdeen area.

| Study | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
|  | $ | $ | $ | $ | $ |

2b. Flood Damage Prevention Studies: Washington, Chehalis River and Tributaries (Cont'd)

Interim feasibility reports have been prepared for areas that have immediate flood problems. A feasibility report for the Aberdeen-Cosmopolis area was completed in FY 1975 and submitted to Congress in November 1978. Continuation of Planning and Engineering studies for that area were initiated in FY 1984. A feasibility report on the addition of hydropower and fish hatchery facilities to the existing Federal Wynoochee Dam was completed in FY 1982 and is currently with the Chief of Engineers. The Centralia report on modification of the privately-owned Skookumchuck Dam to provide flood damage reduction in the Skookumchuck and Chehalis River valleys was completed in FY 1983 and is currently undergoing review by the Assistant Secretary of the Army (Civil Works). FY 1986 and FY 1987 funds will be used to continue and complete flood damage reduction studies for the Aberdeen-Hoquiam area leading to a basin report. The Division Engineer's Aberdeen-Hoquiam report is scheduled for completion in November 1987.

|  |  |  |  |  |  |
|---|---|---|---|---|---|
| Mill Creek Basin (Also OR) | 900,000 | 420,000 | 220,000 | 260,000 | -0- |

Mill Creek originates in the Blue Mountains in northern Oregon and southern Washington, about 21 miles east of the City of Walla Walla, Washington. The stream flows westerly through the center of Walla Walla to a point about 6 miles west of the City where it enters the Walla Walla River. Water resource problems of the 96-square-mile Mill Creek Basin generally include: flood damages from high winter and spring flows; and lack of water during the summer for municipal and industrial water supply, irrigation, and water quality. A need also exists for additional water-based recreation and fishing facilities. There is an existing Corps of Engineers flood control project on Mill Creek consisting of an 8,300 acre-foot offstream storage reservoir, a diversion dam, and an improved channel through the City of Walla Walla. The City obtains its water supply from Mill Creek and groundwater sources; however, City consultants report the groundwater is being depleted and new sources will have to be developed to meet projected future demands. The consultants estimate the Walla Walla area's well capacity will decline by 70 percent and an additional 24 million gallons per day will be required by the year 2000 for the City alone to meet the general water deficit. FY 1986 funds are being used to complete the preliminary investigation of the basin, and initiate detailed studies. The funds requested in FY 1987 will be used to complete the draft and final feasibility report and EIS. The final report of the Division Engineer is scheduled for September 1987.

|  |  |  |  |  |  |
|---|---|---|---|---|---|
| SUB-TOTAL CONTINUING FLOOD DAMAGE PREVENTION STUDIES | 46,944,000 | 27,420,000 | 4,835,000 | 4,807,000 | 9,882,000 |

2c. Shoreline Protection Studies: None

4 FEB 1986

| Study | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ |

2d. Special Studies: None

2e. Comprehensive Studies: The amount of $729,000 is requested to continue two comprehensive basin studies to include six interim studies in FY 1987.

Oregon

| | | | | | |
|---|---|---|---|---|---|
| Willamette River Basin | 3,725,000 | 1,614,000 | 475,000 | 378,000 | 1,258,000 |

The Willamette River Basin is located in northwestern Oregon and is about 160 miles in length and contains about 12,000 square miles. The Willamette River Basin contains only about one-eighth of the area of the State of Oregon; however, it contains about two-thirds of the State's population. Although total water yield of the basin is adequate to meet the present and foreseeable needs, there is a flood problem in the winter and a shortage of water in the summer. The major flood of December 1964 caused damage in the basin estimated at $71 million (this damage would be more than six times greater at present price levels). Estimated average annual flood damage for the basin is over $39 million (1985 price level). A 1970 Level B comprehensive study of the basin established the then-existing and future water and related land resource needs, including needs for flood damage reduction, additional water supply, and hydropower. The study also outlined a general overall plan for meeting those needs of the basin. Based on recent evaluations of the 1970 Level B plan two studies, Santiam River Basin and Comprehensive Review Interims, presently are underway.

FY 1986 funds are being used to continue preliminary engineering, economic, and environmental studies in the Mill Creek Basin element of the Comprehensive Review Interim Study. The Santiam River Basin Interim Study is continuing on reservoir sites identified for further investigations in FY 1985 preliminary studies. In addition, collection of field data for evaluation of temperature-control facilities of existing Corps reservoirs will also be completed. The reservoir site evaluation and water temperature control investigations are separate elements of the Santiam River Basin Interim.

FY 1987 funds will be used to continue studies leading to a preliminary report on the Mill Creek Basin element of the Comprehensive Review Interim Study. The Santiam River Basin Interim Study will continue including evaluation of previously collected temperature-control data.

Based on presently scheduled funding, the Comprehensive Review Interim Study will be completed in December 1989. The Santiam River Basin Interim study element on possible new reservoir projects is scheduled for February 1990. A final report by the Division Engineer on temperature-control at existing Santiam River Basin projects is scheduled for completion in December 1990.

| Study | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ |
| 2e. Comprehensive Studies: (Cont'd) | | | | | |
| Washington | | | | | |
| Puget Sound and Adjacent Waters | 8,383,000 | 6,153,000 | 362,000 | 351,000 | 1,517,000 |

The Puget Sound area lies between the Cascade and Olympic Mountains in northwestern Washington. The area has 10 major and 12 minor rivers flowing into Puget Sound, Georgia Strait, Hood Canal, and the Strait of Juan de Fuca. Its 13,200 square miles of land has a terrain varying from glacier-covered peaks through forest-covered slopes to fertile farmlands and urban centers including Seattle, Tacoma, Everett, and Olympia. Puget Sound's 2,500 square miles of salt water form an inland sea with 10 major ports having deep-water access to the Pacific Ocean. An interagency comprehensive Level B study completed in 1971 assessed existing and future water and related-land resource needs of the basin. Flood damage reduction in the Upper Snoqualmie River Basin was identified as a need in order to protect an estimated 3,500 people living within the 13,700 acre, 100-year floodplain and prevent an estimated $1,700,000 average annual flood damages (1985 price level). Navigation improvements at Neah Bay and Clallam Bay are needed to improve forest product shipments from these tributary areas of the Olympic Peninsula. In addition, small boat basin facilities are needed to provide safe and protected year-round wet moorage for Indian and non-Indian commercial fishing boats and transient recreational boats. The current study effort is directed toward preparing interim reports with sufficient detail to support recommendations for improvements.

Projects for which studies have been completed include: provision of additional flood control storage at an existing hydroelectric reservoir on the Upper Baker River; deepening of Tacoma Harbor's Blair and Sitcum Waterways; water quality control for Lake Washington, Cedar and Green River Basins; Guemes Channel Engineering Feasibility Study, Anacortes; Puget Sound Pleasure Boat Study; and the Snohomish Mediated Agreement. Currently, three interim studies are in progress addressing the needs of Neah Bay, Clallam Bay, and Snoqualmie River.

During FY 1986, detailed design and cost estimates, economic studies, cultural resource assessments, and environmental evaluations for Neah Bay Navigation and Clallam Bay Navigation Interims will be completed and preparation of draft feasibility reports will be initiated. Detailed engineering, economic and environmental studies for the Snoqualmie River Flood Control Interim will be continued, including computer analysis to evaluate water surface profiles and sediment migration in the river for alternative channel configurations.

During FY 1987, a draft feasibility report for Neah Bay will be completed, reviewed by the North Pacific Division Engineer and distributed for public and agency review. For Clallam Bay a draft feasibility will be prepared. A draft feasibility report for Snoqualmie River Flood Control Interim will be completed and reviewed by the North Pacific Division Engineer.

| Study | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ |
| 2e. Comprehensive Studies: Washington, Puget Sound and Adjacent Waters (Cont'd) | | | | | |

Following is the Division Engineer's completion schedule for the active interim studies:

| | |
|---|---|
| Snoqualmie River Flood Control | November 1988 |
| Neah Bay Navigation | April 1988 |
| Clallam Bay Navigation | November 1988 |

| Study | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| SUB-TOTAL COMPREHENSIVE STUDIES | 12,108,000 | 7,767,000 | 837,000 | 729,000 | 2,775,000 |
| 2f. Project Review Studies: None | | | | | |
| TOTAL SURVEYS CONTINUING | 61,067,000 | 36,644,000 | 5,872,000 | 5,699,000 | 12,852,000 |

3. SURVEYS - CONTINUATION OF PLANNING AND ENGINEERING STUDIES

3a. Navigation Studies: The amount of $1,920,000 is requested to initiate one study, continue one study and complete one study during FY 1987.

Alaska

| Study | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| St. Paul Island Harbor | 550,000 | 0 | 0 | 400,000 | 150,000 |

St. Paul is the northernmost island of the Pribilof Island group, presently serving as the air transportation hub for both St. George and St. Paul Islands. The Pribilof Islands are located adjacent to fertile groundfishing resources as well as potential oil and gas fields of the Norton, St. George, North Aleutian, and Navarin Basins. A feasibility report submitted to the Secretary of the Army in August 1983 recommended construction of navigation improvements at St. Paul, including a 1,800-foot-long breakwater, an entrance channel, a maneuvering area, and a mooring area to service existing commercial and subsistence fishing fleets. The recommended project would cost about $24.8 million. Consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, local interests will be required to provide lands, easements, rights-of-way, and required disposal areas, presently estimated at less than $1 million; pay 10 percent of the costs allocated to deep draft navigation during construction, presently estimated at $1,280,000; and pay an additional 10 percent of the costs allocated to deep draft navigation

| Study | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ |

3a. Navigation Studies: Alaska, St. Paul Island Harbor (Cont'd)

within a period of 30 years following completion if not offset by credit allowed by the Secretary of the Army. No relocation of buildings, utilities, roads, or other facilities is anticipated as this work has been accomplished by the City of St. Paul during the breakwater construction in 1984 and 1985. During this period the City initiated phase I of a local effort to accelerate harbor construction by opening a quarry and placing 850 feet of rock revetment in the general breakwater alignment. The City of St. Paul has reiterated support and sponsorship, as recent as October 1985, urging early completion of the project. FY 1987 funds will be used to initiate planning and engineering studies, including model studies of the breakwater associated with design changes recommended by the City. Additional geotechnical investigations, including drilling of more quarry area, are needed to determine availability of suitable armor rock necessary to build the modified breakwater design and alignment. Studies will also include engineering, economic, and environmental evaluation of the revised breakwater design considering work completed by the City.

Planning and engineering is scheduled to be completed in September 1988.

Washington

| Study | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| East, West & Duwamish Waterways (Seattle Harbor) | 2,910,000 | 400,000 | 600,000 | 750,000 | 1,160,000 |

Seattle Harbor is the largest of seven major ports in the Puget Sound region, the third largest container port in the United States, and the eleventh largest container port in the world. Seattle Harbor is also considered to be among the top ten ports in the country based on value of goods handled and the economic impact the port generates. For example, the value of goods transiting the harbor has increased from $10 billion in 1978 to $20.3 billion in 1984. Fifty to sixty percent of the total Seattle Harbor tonnage is handled in the East, West and Duwamish Waterways. However, the existing authorized channel dimensions for the waterways are too narrow and shallow for efficient and safe passage by large oceangoing vessels. Also, the existing Burlington Northern Railroad Bridge crossing the Duwamish Waterway has a horizontal clearance which is too narrow for the type of vessels now using the waterway. Consequently, these inadequate dimensions are causing inefficient shipping practices such as partial loading, waiting for favorable tides, and using smaller less efficient vessels. In 1978, a collision of a dry bulk ship with the Spokane Street Bridge support pier caused extensive damage and traffic disruption. The highway bridge, located immediately downstream from the railroad bridge, has recently been replaced by a new structure which would be compatible with the navigation project proposed in a feasibility report completed in April 1983. The recommended channel improvements, including replacement of the existing railroad bridge with a new bridge having an increased horizontal span, would permit increased safety and result in transportation savings to larger vessels through economies of scale and reduced tidal delays.

| Study | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ |

3a. Navigation Studies: Washington, East, West & Duwamish Waterways (Seattle Harbor) (Cont'd)

The recommended project, estimated to cost $59.8 million, provides for improvement of two and one-half miles of the existing deep-draft channels, replacement of the restrictive railroad bridge over the navigation channel, deepening of an existing turning basin, and deauthorization of another existing turning basin. The average annual benefits are currently estimated at $11,760,000, including $11,730,000 for transportation savings and $30,000 for recreation development. The benefit-cost ratio is estimated at 2.1 to 1. Consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, local interests will be required to provide lands, easements, rights-of-way, and required disposal areas, presently estimated at $4,221,000; modify or relocate buildings, utilities, roads, and other facilities, except railroad bridges, where necessary in the construction of the project, presently estimated at $2,680,000; pay one-half of the separable and joint costs allocated to recreation, presently estimated at $170,000, and bear all costs of operation, maintenance, and replacement of recreation facilities, presently estimated at $2,000 annually; pay 25 percent of the separable and joint costs allocated to fish and wildlife enhancement, presently estimated at $327,000, and bear all costs of any operation, maintenance and replacement of fish and wildlife facilities (no O&M and replacement costs are anticipated since shallow-water habitat would be created); and pay 25 percent of the costs allocated to deep draft navigation during construction, presently estimated at $10,455,000, and pay an additional 10 percent of the costs allocated to deep draft navigation within a period of 30 years following completion if not offset by credit allowed by the Secretary of the Army.

FY 1986 funds are being used to continue General Design Memorandum and environmental studies. FY 1987 funds will be used to continue Planning and Engineering studies including work on contaminated sediment mobility studies, channel, bulkhead and railroad bridge design, an Environmental Impact Statement Supplement and economic studies. Planning and Engineering studies are scheduled for completion in March 1990.

| | | | | | |
|---|---|---|---|---|---|
| Grays Harbor, Chehalis and Hoquiam Rivers | 3,860,000 | 2,140,000 | 950,000 | 770,000 | 0 |

Grays Harbor is a large tidal estuary in southwestern Washington and lies entirely within Grays Harbor County. The entrance is 45 miles north of the mouth of the Columbia River and 110 miles south of the Strait of Juan de Fuca. Grays Harbor is the largest Pacific Northwest supplier of logs to mainland China. Total waterborne commerce through Grays Harbor in 1983 was 4.1 million tons and continued at a record rate in 1985. Channel improvements to Grays Harbor would permit transportation savings through economies of scale allowing larger vessels from foreign and domestic ports to call. Since 1983, approximately seventy-five percent of vessels leaving the harbor had sailing drafts in excess of the present 30-foot authorized channel depth. Inadequate channel depths caused significant delays to these vessel departures, and in some cases, did not permit them to load to their full capacity.

| Study | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ |

3a. Navigation Studies: Washington, Grays Harbor, Chehalis and Hoquiam Rivers (Cont'd)

The recommended project, estimated to cost $93.5 million, includes widening and deepening of the existing 24.3 mile deep-draft channel from the Pacific Ocean through the harbor and up the Chehalis River to Aberdeen and Cosmopolis. Also included is replacement of a restrictive railroad bridge over the navigation channel, addition of two new turning basins at Aberdeen, and deauthorization of two existing turning basins. The average annual benefits for transportation savings would be over $15 million. The benefit-cost ratio is 1.3 to 1. Consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, local interests will be required to provide lands, easements, rights-of-way, and required disposal areas, presently estimated at $6,670,000; modify or relocate buildings, utilities, roads, and other facilities, except railroad bridges, where necessary in the construction of the project, presently estimated at $2,040,000; and pay 25.2 percent of the costs allocated to deep draft navigation during construction, presently estimated at $20,607,000, pay an additional 10 percent of the costs allocated to deep draft navigation within a period of 30 years following completion if not offset by credit allowed by the Secretary of the Army, and pay 50 percent of the costs of incremental maintenance below 45 feet below mean low water.

FY 1986 funds are being used to continue engineering and environmental studies leading to preparation of the General Design Memorandum and Environmental Impact Statement Supplement. FY 1987 funds will be used to complete planning and engineering and a GDM and EIS Supplement. Planning and engineering studies are scheduled for completion in September 1987.

| | | | | | |
|---|---|---|---|---|---|
| SUB-TOTAL CONTINUATION OF PLANNING AND ENGINEERING, NAVIGATION STUDIES | 7,320,000 | 2,540,000 | 1,550,000 | 1,920,000 | 1,310,000 |

3b. Flood Damage Prevention Studies: The amount of $147,000 is requested to complete one study during FY 1987.

Washington

| | | | | | |
|---|---|---|---|---|---|
| Chehalis River at South Aberdeen & Cosmopolis | 1,097,000 | 500,000 | 450,000 | 147,000 | 0 |

Chehalis River drains an area of about 2,100 square miles in southwest Washington and empties into Grays Harbor. The South Aberdeen and Cosmopolis flood plain encompasses about 1,560 acres of mostly urban development on the left bank of the Chehalis River. The maximum flood of record would cause an estimated $14 million damage in South Aberdeen and Cosmopolis under October 1985 prices and conditions of development. A feasibility report has been submitted to Congress. The recommended project, estimated to cost $21.9 million, includes construction of a levee system to provide

| Study | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ |

3b. Flood Damage Prevention Studies: Washington, Chehalis River at South Aberdeen & Cosmopolis (Cont'd)

flood protection to 1,310 acres in South Aberdeen and Cosmopolis. Pumping stations and gravity outlets with tide gates are included to accommodate interior runoff. The average annual benefits for flood damage reduction amount to about $2,700,000. The benefit-cost ratio is 1.3 to 1. Consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, local interests will be required to provide lands, easements, rights-of-way, and required disposal areas, presently estimated at $454,000; modify or relocate buildings, utilities, roads, and other facilities, except railroad bridges, where necessary in the construction of the project, presently estimated at $716,000; and pay $6,485,000 which is the remaining portion of 35 percent of the costs allocated to flood control, and bear all costs of operation, maintenance and replacement of flood control facilities presently estimated at $65,000 annually.

FY 1986 funds are being utilized to continue work on the General Design Memorandum, including engineering and economic studies, foundation and materials investigations and environmental studies. FY 1987 funds be utilized for completion of planning and engineering studies in May 1987.

| Study | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| SUB-TOTAL - CONTINUATION OF PLANNING AND ENGINEERING, FLOOD DAMAGE PREVENTION STUDIES | 1,097,000 | 500,000 | 450,000 | 147,000 | 0 |
| 3c. Shoreline Protection Studies: None | | | | | |
| 3d. Special Studies: None | | | | | |
| 3e. Comprehensive Studies: None | | | | | |
| 3f. Project Review Studies: None | | | | | |
| TOTAL SURVEYS - CONTINUATION OF PLANNING AND ENGINEERING STUDIES | 8,417,000 | 3,040,000 | 2,000,000 | 2,067,000 | 1,310,000 |
| 4. PHASE I STAGE OF ADVANCE ENGINEERING AND DESIGN - NEW - None | | | | | |
| 5. PHASE I STAGE OF ADVANCE ENGINEERING AND DESIGN - CONTINUING - None | | | | | |
| 6. PHASE I STAGE OF ADVANCE ENGINEERING AND DESIGN - CONTINUATION OF PLANNING AND ENGINEERING STUDIES - None | | | | | |
| GRAND TOTAL | 69,704,000 | 39,604,000 | 7,872,000 | 8,066,000 | 14,162,000 |

# BONNEVILLE NAVIGATION LOCK, OREGON AND WASHINGTON

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DIVISION: NORTH PACIFIC    DISTRICT: PORTLAND, OREGON    REGION: COLUMBIA NORTH PACIFIC

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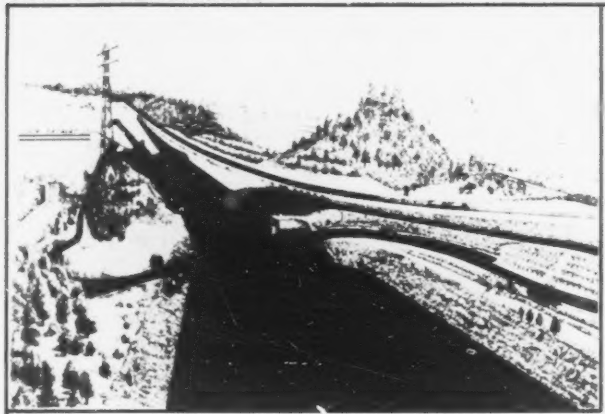
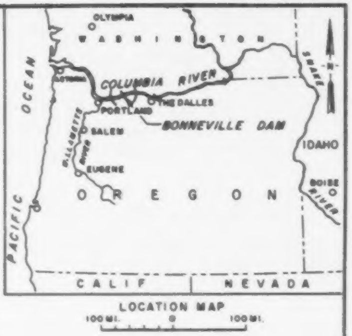
CORPS OF ENGINEERS U. S. ARMY

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PORTLAND
THE DALLES
BONNEVILLE DAM
SALEM
EUGENE
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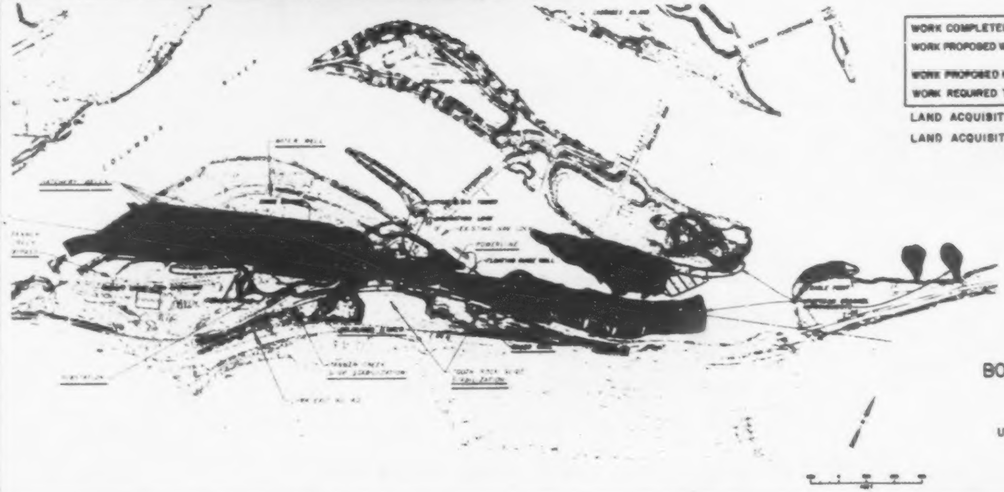

| | |
|---|---|
| WORK COMPLETED AS OF 30 SEPTEMBER 1985 | ▆ |
| WORK PROPOSED WITH FUNDS AVAILABLE FOR F.Y 1986 | ▨ |
| WORK PROPOSED WITH FUNDS REQUESTED FOR F.Y. 1987 | ▨ |
| WORK REQUIRED TO COMPLETE THE PROJECT AFTER F.Y. 1987 | ▆ |
| LAND ACQUISITION COMPLETED AS OF 30 SEP 1985 | ▭ |
| LAND ACQUISITION PROPOSED FOR FY 1986 | ▭ |

COLUMBIA RIVER

## BONNEVILLE NAVIGATION LOCK

OREGON AND WASHINGTON

SCALES AS SHOWN

U.S. ARMY ENGINEER DISTRICT, PORTLAND
NORTH PACIFIC DIVISION

PREPARED 1 JAN 1986

APPROPRIATION TITLE: Construction, General - Navigation - Locks and Dams

PROJECT: Bonneville Navigation Lock, Oregon and Washington (Continuing)

LOCATION: At Bonneville Lock and Dam, OR and WA, project on the Columbia River at river mile 145.5 and 42 miles east of Portland, Oregon

AUTHORIZATION: Supplemental Appropriations Act, 1985, PL 99-88.

BENEFIT TO COST RATIO: The remaining benefit-remaining cost ratio is 1.2 to 1 at 8-1/8 percent. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1985) was 1.15 to 1. The benefit-cost ratio was based on the project functioning independently.

SUMMARIZED FINANCIAL DATA

| | | |
|---|---|---|
| Estimated Federal Cost | | $203,000,000 |
| General Appropriations | $101,500,000 | |
| Inland Waterways Trust Funds | $101,500,000 | |
| Estimated Non-Federal Cost | | 0 |
| Total Estimated Project Cost | | $203,000,000 |

| STATUS: (1 Jan 1986) | PERCENT COMPLETE | COMPLETION SCHEDULE |
|---|---|---|
| Entire Project | 0 | Apr 92 |
| Relocations | 0 | Sep 91 |
| Lock | 0 | Mar 92 |
| Roads and Bridges | 0 | Apr 92 |
| Channels and Canals | 0 | Mar 92 |
| Buildings and Grounds | 0 | Apr 92 |

| | General Appropriations | Inland Waterways Trust Fund | Accumulated Percentage of Estimated Federal Cost |
|---|---|---|---|
| Allocations to 30 September 1985 | $ 154,000 | $ 0 | |
| Conference Allowance for FY 1986 | 0 | 0 | |
| Potential Allocation for FY 1986 | 3,846,000 | 4,000,000 | |
| Potential Allocations to Date | 4,000,000 | 4,000,000 | 4 |
| Allocation Requested for FY 1987 | 10,000,000 1/ | 10,000,000 1/ | 14 |
| Scheduled Balance to Complete after FY 1987 | 87,500,000 | 87,500,000 | |
| Unscheduled Balance to Complete after FY 1987 | 0 | 0 | |

1/ Obligation and expenditure of the budgeted funds for construction of this project are contingent upon enactment of legislation increasing the amount of revenue derived from taxes imposed on fuels used by vessels engaged in commercial waterway transportation in accordance with the agreement between the Administration and the Senate Majority Leadership.

Division: North Pacific District: Portland Region: Columbia-North Pacific

## PHYSICAL DATA

Lock Dimensions: 86 ft wide; 675 feet long; 19 foot sill depth; Lift Range: 30 to 75.5 feet

| Relocations: | | |
|---|---|---|
| | Interstate 84 Exit #40 | $ 102,000 |
| | Union Pacific Railroad (3600 feet) | 4,359,000 |
| | Wells/Tanner Creek Bypass/Powerline | 3,127,000 |

Lands and Damages: Acres - 80; Major portion of real estate needed is within existing project boundary; additional 80 acres will need to be acquired for lock, railroad relocation, drainage systems, river channel improvements.

JUSTIFICATION: Navigation problems at Bonneville stem from two conditions: hazardous lock entrance conditions and the small size of the lock (500 feet long and 76 feet wide) in comparison with standard upriver locks (675 feet long and 86 feet wide). Cross currents in the upstream lock approach create a hazard to tows approaching the lock. Accidents have been recorded on an average of two per year, and will increase with growth in traffic. The small lock chamber size is causing increasing delays and congestion, as demand for waterway transportation increases. Delays of as much as 8 hours have occurred with an optimum tow configuration of five barges, as compared to a transit time of less than an hour for upriver locks. This delay occurs because a maximum of only two barges can presently be locked through at one time at Bonneville. Total average annual benefits are estimated to be $19,627,000 based on 1 October 1985 price levels.

STATUS OF LAND ACQUISTION: All necessary lands, easements, and rights-of-way are scheduled to be obtained by April 1986. Final land exchanges with the railroad will be completed after all construction affecting the railroad lands is complete.

FISCAL YEAR 1987: The requested amount of $20,000,000 ($10,000,000 from General Appropriations and $10,000,000 from Inland Waterways Trust Fund) will be applied as follows:

| | Amount |
|---|---|
| Continue Relocations | $3,693,000 |
| Continue Lock Construction | 9,728,000 |
| Complete Initial U/S Channel Work of Channels & Canals | 2,981,000 |
| Complete Substation Portion of Buildings, Grounds and Utilities | 74,000 |
| Engineering and Design | 2,400,000 |
| Supervision and Administration | 1,124,000 |
| Total | $20,000,000 |

NON-FEDERAL COSTS: In accordance with the agreement between the Administration and the Senate Majority Leadership, fifty percent of the total construction cost will be derived from the Inland Waterways Trust Fund.

STATUS OF LOCAL COOPERATION: Agreements with Union Pacific Railroad for relocation of the railroad, and with the Oregon Department of Transportation for relocation of a portion of the Interstate 84 offramp Exit #40, are scheduled to be signed in April 1986.

COMPARISON OF FEDERAL COST ESTIMATE: The current Federal cost estimate of $203,000,000 is an increase of $21,000,000 from the latest estimate ($182,000,000, October 1983) submitted to Congress. This change includes increases of $9,000,000 based on higher price levels to 1 October 1985; $18,000,000 for an estimated inflation allowance from 1 October 1985 through the construction period; $893,000 for railroad relocations based on refined estimate; and $10,196,000 for change in downstream channel configuration and for upstream channel modifications and architectural and landscape treatment of the downstream channel. These increases were partially offset by decreases of $1,697,000 for Lands and Damages primarily due to availability of disposal sites without Government purchase; $11,939,000 for the lock feature based on refined estimate for the upstream guardwall, cofferdam, lowering of lock wall elevations, and revised lock foundation and cell designs; $1,416,000 for Roads, Railroads and Bridges based on new design of bridge over the lock approach channel; and $2,037,000 in Engineering & Design and Supervision & Administration based on reanalysis of requirements.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT:

A Final Environmental Impact Statement (FEIS) addressing the construction of a new navigation lock at Bonneville Lock and Dam, Oregon and Washington was filed with the U.S. Environmental Protection Agency (EPA) on 20 Mar 1981. A draft Supplement to the FEIS was filed with EPA on 16 August 1985 and the Final Supplement is scheduled to be filed in February 1986.

Provisions of Section 404 of the Clean Water Act are scheduled to be met by a Section 404(b)(1) Evaluation. A Public Notice was issued on 14 August 1985 and Certification from the States of Oregon and Washington will be obtained in February 1986. The District Commander's signature on the Section 404(b)(1) Evaluation is expected in February 1986.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1982 and for construction in FY 1985.

## HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: North Pacific
District: Portland
Project: Bonneville Navigation Lock, OR & WA

| Item | Estimates Presented to Congress ($1,000) | | | | |
|---|---|---|---|---|---|
| | Original Baseline | Cumulative Changes | Last | Incremental Change | Current |
| Federal Cost | 182,000 | | 182,000 | | 203,000 1/ |
| (Price Level) | (Oct 1983) | | (Oct 1983) | | |
| Reason for Change | | | | (21,000) 1/ | |
| a. Price Level | | | | 27,000 | |
| b. Design Changes | | | | | |
| c. Additional Function Added Under General Authorization | | | | | |
| d. Authorized Modification | | | | | |
| e. Post-Contract Award and Other Estimating Adjustments | | | | -6,000 2/ | |
| f. Schedule Changes | | | | | |
| g. Sundry | | | | | |
| h. Real Estate | | | | | |

1/ Includes $18,000 allowance for estimated inflation from 1 October 1985 through the construction period.
2/ Primarily due to increased costs for modification of U/S channel improvements, increased costs to construct railroad relocation, decreased costs for E&D and S&A, decreased costs due to disposal sites available to Government without purchase, and decreased costs due to refined estimates and designs.

REPORTS CONTROL SYMBOL [illegible]

| APPROPRIATION TITLE: CONSTRUCTION GENERAL | CLASSIFICATION: NAVIGATION-LOCKS AND DAMS |
|---|---|

## SUMMARY CONSTRUCTION PROGRAM (PB-2)

FISCAL YEARS 19 [illegible] AND 19 [illegible]

| ITEM | PROJECT COST ESTIMATE | TOTAL TO 30 SEP 19 [illegible] | CURRENT FY 19 [illegible] | BUDGET FY 19 [illegible] | BALANCE TO COMPLETE AFTER FY [illegible] |
|---|---|---|---|---|---|
| RELOCATIONS | [illegible] | 0 | [illegible] | [illegible] | [illegible] |
| LANDS | [illegible] | 0 | [illegible] | [illegible] | [illegible] |
| ROADS AND BRIDGES | [illegible] | 0 | 0 | 0 | [illegible] |
| CHANNELS AND CANALS | [illegible] | 0 | [illegible] | [illegible] | [illegible] |
| BUILDINGS, GROUNDS AND UTILITIES | [illegible] | 0 | [illegible] | [illegible] | [illegible] |
| ENGINEERING AND DESIGN | [illegible] | 0 | [illegible] | [illegible] | [illegible] |
| SUPERVISION AND ADMINISTRATION | [illegible] | 0 | [illegible] | [illegible] | [illegible] |
| TOTAL APPLIED COST (FED FUNDS ONLY) | [illegible] | 0 | [illegible] | [illegible] | [illegible] |
| UNDISTRIBUTED COSTS (NONE) | | | | | |
| TOTAL PROJECT COST (FED FUNDS ONLY) | [illegible] | 0 | [illegible] | [illegible] | [illegible] |
| PENDING ALLOTMENTS (NONE) | | | | | |
| TOTAL COST | [illegible] | 0 | [illegible] | [illegible] | [illegible] |
| FEDERAL FUNDS | | | | | |
| GENERAL APPROPRIATIONS | | | | | |
| TOTAL COST | [illegible] | | | | |
| UNOBLIGATED [illegible] | | 0 | | | |
| TOTAL OBLIGATIONS | | | [illegible] | [illegible] | [illegible] |
| INLAND WATERWAYS TRUST FUND | | | | | |
| TOTAL COST | [illegible] | | | | |
| UNOBLIGATED [illegible] | | 0 | | | |
| TOTAL OBLIGATIONS | | | [illegible] | [illegible] | [illegible] |

| EFFECTIVE DATE | DIVISION / DISTRICT | REGION / BASIN | PROJECT |
|---|---|---|---|
| 1 JAN [illegible] | NORTH PACIFIC<br>PORTLAND, OREGON | COLUMBIA-NORTH PACIFIC<br>[illegible]-COLUMBIA | BONNEVILLE NAVIGATION LOCK<br>OR & WA |

ENG FORM [illegible] [illegible] EDITION OF [illegible] IS OBSOLETE.

REPORTS CONTROL SYMBOL DAEN-CWB-13

| APPROPRIATION TITLE: CONSTRUCTION GENERAL | CLASSIFICATION: NAVIGATION-LOCKS AND DAMS |
|---|---|

## SUMMARY CONSTRUCTION PROGRAM (PB-1)
FISCAL YEARS 19 86 AND 19 87

| LINE NO. | ITEM | PROJECT COST ESTIMATE | TOTAL TO 30 SEP 19 85 | CURRENT FY 19 86 | BUDGET FY 19 87 | BALANCE TO COMPLETE AFTER FY 19 87 |
|---|---|---|---|---|---|---|
|  | (a) | (b) | (c) | (d) | (e) | (f) |
| 1 | METHOD OF FINANCING |  |  |  |  |  |
| 2 | FEDERAL FUNDS |  |  |  |  |  |
| 3 | GENERAL APPROPRIATIONS |  |  |  |  |  |
| 4 | ALLOCATIONS |  | 154,000 | 3,846,000 |  |  |
| 5 | UNOBLIGATED CARRYOVER FROM PRIOR YEAR |  |  | 154,000 |  |  |
| 6 | TOTAL FUNDS AVAILABLE FOR OBLIGATION |  |  | 4,000,000 |  |  |
| 7 | APPROPRIATION REQUIRED |  |  |  | 10,000,000 | 87,500,000 |
| 8 | INLAND WATERWAYS TRUST FUNDS |  |  |  |  |  |
| 9 | ALLOCATIONS |  | 0 | 4,000,000 |  |  |
| 10 | UNOBLIGATED CARRYOVER FROM PRIOR YEAR |  |  | 0 |  |  |
| 11 | TOTAL FUNDS AVAILABLE FOR OBLIGATION |  |  | 4,000,000 |  |  |
| 12 | APPROPRIATION REQUIRED |  |  |  | 10,000,000 | 87,500,000 |
| 13 |  |  |  |  |  |  |
| 14 |  |  |  |  |  |  |
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| 31 |  |  |  |  |  |  |
| 32 |  |  |  |  |  |  |
| 33 |  |  |  |  |  |  |

| EFFECTIVE DATE | DIVISION / DISTRICT | REGION / BASIN | PROJECT |
|---|---|---|---|
| 1 JAN 86 | NORTH PACIFIC<br>PORTLAND, OREGON | COLUMBIA-NORTH PACIFIC<br>MID-COLUMBIA | BONNEVILLE NAVIGATION LOCK<br>OR & WA |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE.

# MT. ST. HELENS SEDIMENT CONTROL, WASHINGTON

DIVISION: NORTH PACIFIC DISTRICT: PORTLAND, OREGON REGION: COLUMBIA NORTH PACIFIC

APPROPRIATION TITLE: Construction, General - Local Protection Projects (Flood Control)

PROJECT: Mt. St. Helens Sediment Control, Washington (New)

LOCATION: On the North Fork Toutle River, 2 miles upstream from its confluence with the Green River, in Cowlitz County, southwest Washington. The river systems impacted by the project include Toutle, Cowlitz and Columbia Rivers. Most of the population affected by the problems reside in the communities of Longview, Kelso, Lexington and Castle Rock, Washington.

AUTHORIZATION: Supplemental Appropriations Act, 1985, PL 99-88.

BENEFIT TO COST RATIO: The benefit to cost ratio is 3.0 to 1 at 8-5/8 percent. The benefit to cost ratio is based on the project functioning independently.

| SUMMARIZED FINANCIAL DATA | | | Accum. % of Est. Fed Cost |
|---|---|---|---|
| Estimated Federal Cost | | $ 148,000,000 | |
| Estimated Non-Federal Cost | | 21,000,000 | |
| Cash Contribution | None | | |
| Other | 21,000,000 | | |
| Total Estimated Project Cost | | 169,000,000 | |
| Allocations to 30 September 1985 | | 91,000 | |
| Conference Allowance for FY 1986 | | 500,000 | |
| Potential Allocation for FY 1986 | | 3,500,000 | |
| Potential Allocations through FY 1986 | | 3,591,000 | |
| Allocation Requested for FY 1987 | | 17,000,000 | |
| Scheduled Balance to Complete after FY 1987 | | 127,409,000 | |
| Unscheduled Balance to Complete after FY 1987 | | 0 | |

| STATUS: (1 Jan 1986) | PERCENT COMPLETE | COMPLETION SCHEDULE |
|---|---|---|
| Entire Project | 0 | Indefinite |
| Land Acquisition | 0 | Dec 87 |
| Levee Improvements | 0 | Sep 88 |
| Reservoir Clearing | 0 | Oct 88 |
| Sediment Retention Structure | 0 | Jul 89 |
| Dredging | 0 | Indefinite 1/ |

1/ Completion of dredging is a function of future sediment conditions.

Division: North Pacific District: Portland Region: Columbia-North Pacific

Mt. St. Helens Sediment Control, WA

RECOMMENDED PLAN

Dam: Type - Earth and Rockfill
Spillway Height - 125 feet
Length - 1,680 feet
Spillway Width - 500 feet

PHYSICAL DATA

Lands and Damages: Acres - 5,207 (Sediment Retention Structure)
1,300 (Disposal Sites for Dredging)
Ultimate Sediment Capacity: 258 million cubic yards

JUSTIFICATION: The eruption of Mt. St. Helens in 1980 resulted in the movement of sediment creating a threat of flooding and navigation disruption in southwestern Washington. With projected future erosion of the debris avalanche and sediment movement, there exists a continuing threat of flooding, with the largest amount of damages occurring to the community of Kelso and to the transportation corridor crossing the Toutle River (Interstate Highway I-5, and Burlington-Northern Railway line). Lesser damages would occur to the communities of Longview, Lexington and Castle Rock. The potential disruption of navigation on the Columbia River is considered to be negligible under average sediment conditions. Eventually up to 550 million cubic yards would probably be eroded from the debris avalanche. Projected annual sediment deposition in the Cowlitz River for the next few years is about 6 million cubic yards (mcy). Actual amounts will depend on variable hydrologic conditions and armoring of the erosion channels. The annual benefits are estimated to be $27,742,000 (October 1985 price level). In addition to the benefit of preventing flood damages ($14,662,000 annually), the proposed project when implemented would reduce the costs for providing temporary emergency flood protection (under PL 98-63) resulting from the sediment problem (annual benefit of $13,080,000). Flood protection afforded by the proposed project would provide protection of at least 100-year at Longview, Kelso, Lexington and Castle Rock.

FISCAL YEAR 1987: The requested amount of $17,000,000 will be applied as follows:

| | |
|---|---|
| Initiate Construction of Sediment Retention Structure | $15,100,000 |
| Engineering and Design | 700,000 |
| Supervision and Administration | 1,200,000 |
| Total | $17,000,000 |

NON-FEDERAL COST: In accordance with the cost sharing and financing concepts reflected in PL 99-88, the total estimated non-Federal cost for construction is $21,000,000 including allowances for inflation. Local interests are required to provide lands, easements, rights-of-way, and material disposal areas, presently estimated at $16,100,000; modify or relocate buildings, utilities, roads and other facilities where necessary in the construction of the project at $400,000; and mitigation of material disposal sites at $4,500,000.

The total estimated non-Federal cost for operation and maintenance over a 50 year period is $11,400,000 (October 1985 price level). Local interests will be responsible for disposal site rehabilitation ($6,800,000), and operation and maintenance of fish facilities ($3,600,000) and levees ($1,000,000).

STATUS OF LOCAL COOPERATION: The following Letters of Assurance (LOA) have been received:

| Local Interest | Date of LOA |
|---|---|
| State of Washington | 11 December 1985 |
| Cowlitz County, Washington | 12 December 1985 |
| Drainage Improvement District No. 1 of Cowlitz County, Washington | 13 December 1985 |
| Consolidated Diking Improvement District No. 3 | 13 December 1985 |

Rights-of-entry for construction would be obtained by local interests over Weyerhauser and Washington State Department of Natural Resources lands necessary for initial construction. Overall project acquisition program most likely would be initiated with priority to occupied parcels where relocation of individuals would be required.

COMPARISON OF FEDERAL COST ESTIMATE: Not Applicable

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT:

The Final Environmental Impact Statement (EIS) was filed with the Environmental Protection Agency on 18 January 1985. The provisions of Section 404 of the Clean Water Act were met by a Section 404(b)(1) Evaluation, included with the EIS, contained in the Mt. St. Helens, Washington Feasibility Report dated December 1984.

OTHER INFORMATION: Funds to initiate preconstruction planning were allotted in FY 1985.

## HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

**Division:** North Pacific
**District:** Portland

**Project:** Mt. St. Helens Sediment Control, Washington

| Item | Estimates Presented to Congress ($1,000) | | | | |
|---|---|---|---|---|---|
| | Original Baseline | Cumulative Changes | Last | Incremental Change | Current |
| Federal Cost<br>(Price Level) | 148,000<br>(FY 1987) | N/A | N/A | 0 | 148,000 1 |

Reason for Change

a. Price Escalation
b. Design Changes
c. Additional Function Added Under General Authorization
d. Authorized Modification
e. Post-Contract Award and Other Estimating Adjustments
f. Schedule Changes
g. Sundry
h. Real Estate

1/ Includes an allowance for estimated inflation through the construction period.
2/ Includes $6,100,000 for adjustments in the estimated inflation allowance through the construction period.

## SUMMARY CONSTRUCTION PROGRAM PB-1

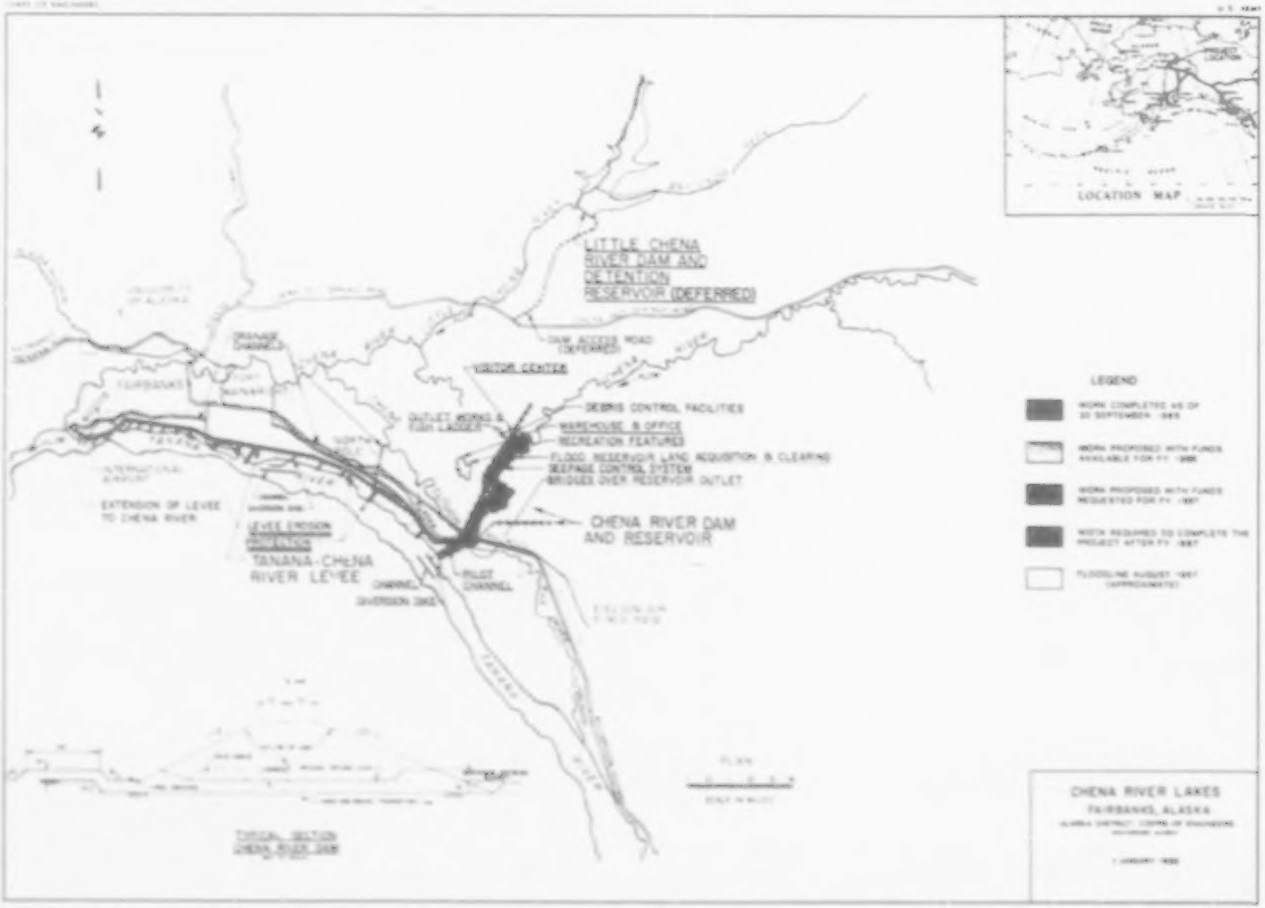
| [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
|---|---|---|---|---|---|
| DAMS | [illegible] | | | [illegible] | [illegible] |
| CHANNELS AND CANALS | [illegible] | | | | [illegible] |
| LEVEES AND FLOODWALLS | [illegible] | | | | [illegible] |
| ENGINEERING AND DESIGN | [illegible] | | [illegible] | [illegible] | [illegible] |
| SUPERVISION AND ADMINISTRATION | [illegible] | | | [illegible] | [illegible] |
| TOTAL AFFECTED COST (C OF E FUNDS ONLY) | [illegible] | | [illegible] | [illegible] | [illegible] |
| UNDISTRIBUTED COST (REDN) | | | | | |
| TOTAL PROJECT COST (C OF E FUNDS ONLY) | [illegible] | | [illegible] | [illegible] | [illegible] |
| PENDING ADJUSTMENTS (REDN) | | | | | |
| TOTAL COST (C OF E FUNDS ONLY) | [illegible] | | [illegible] | [illegible] | [illegible] |
| UNOBLIGATED BALANCE | | | | | |
| TOTAL OBLIGATIONS | | | [illegible] | [illegible] | |
| METHOD OF FINANCING | | | | | |
| FEDERAL FUNDS (C OF E FUNDS ONLY) | | | | | |
| ALLOCATIONS | | | [illegible] | | |
| UNOBLIGATED CARRYOVER FROM PRIOR YEAR | | | [illegible] | | |
| TOTAL FUNDS AVAILABLE OF OBLIGATION | | | [illegible] | | |
| APPROPRIATION REQUEST | | | | [illegible] | [illegible] |

NORTH PACIFIC
PORTLAND, OREGON

COLUMBIA-NORTH PACIFIC
LOWER COLUMBIA

## CHENA RIVER LAKES

DIVISION: NORTH PACIFIC DISTRICT: ALASKA REGION: ALASKA


CORPS OF ENGINEERS
U.S. ARMY
LOCATION MAP
PROJECT LOCATION
LITTLE CHENA RIVER DAM AND DETENTION RESERVOIR (DEFERRED)
DAM ACCESS ROAD (DEFERRED)
UNIVERSITY OF ALASKA
FAIRBANKS
DRAINAGE CHANNELS
FORT WAINWRIGHT
TANANA
INTERNATIONAL AIRPORT
EXTENSION OF LEVEE TO CHENA RIVER
LEVEE EROSION PROTECTION
TANANA-CHENA RIVER LEVEE
CHANNEL
DIVERSION DIKE
PILOT CHANNEL
VISITOR CENTER
OUTLET WORKS & FISH LADDER
DEBRIS CONTROL FACILITIES
WAREHOUSE & OFFICE
RECREATION FEATURES
FLOOD RESERVOIR LAND ACQUISITION & CLEARING
SEEPAGE CONTROL SYSTEM
BRIDGES OVER RESERVOIR OUTLET
CHENA RIVER DAM AND RESERVOIR
CHENA RIVER
TANANA RIVER
PLAN
SCALE IN MILES
TYPICAL SECTION CHENA RIVER DAM
LEGEND
WORK COMPLETED AS OF 30 SEPTEMBER 1985
WORK PROPOSED WITH FUNDS AVAILABLE FOR FY 1986
WORK PROPOSED WITH FUNDS REQUESTED FOR FY 1987
WORK REQUIRED TO COMPLETE THE PROJECT AFTER FY 1987
FLOODLINE AUGUST 1967 (APPROXIMATE)
CHENA RIVER LAKES
FAIRBANKS, ALASKA
ALASKA DISTRICT, CORPS OF ENGINEERS
ANCHORAGE, ALASKA
1 JANUARY 1986

APPROPRIATION TITLE: Construction, General - Reservoirs (Flood Control)

PROJECT: Chena River Lakes, Fairbanks, Alaska (Continuing)
LOCATION: In the vicinity of Fairbanks, Alaska, providing protection from the Tanana River, Chena River, Little Chena River, and their tributaries.
AUTHORIZATION: 1968 Flood Control Act
BENEFIT-TO-COST RATIO: The remaining benefit-remaining cost ratio is not applicable because the project is nearing completion. The benefit-to-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1973) was 2.8 to 1. The benefit-to-cost ratio was based on the project functioning independently.

| SUMMARIZED FINANCIAL DATA | | Accumulated % of Est. Fed. Cost |
|---|---|---|
| Estimated Federal Cost (Initial) | $209,000,000 | |
| Estimated Non Federal Cost | 12,598,000 | |
| Cash Contribution $ 2,183,000 | | |
| Other Costs 10,415,000 | | |
| Total Est. Project Cost (Initial) | $221,598,000 | |
| Total Est. Project Cost for Ultimate Development (including Little Chena Dam) 1/ | $376,598,000 | |
| Allocations to 30 September 1985 | $196.208,000 | |
| Conference Allowance for FY 1986 | $ 5,000,000 | |
| Allocation for FY 1986 | $ 4,000,000 2/ | |
| Allocations to Date | $200,208,000 | 96 |
| Allocation Requested for FY 1987 | $ 7,000,000 | 99 |
| Scheduled Balance to Complete after FY 1987 | $ 1,792,000 | |
| Unscheduled Balance to Complete after FY 1987 | -0- | |

1/ Initial development cost includes allowance for inflation through the construction period; ultimate development based on October 1985 prices.
2/ Reflects $1,000,000 reduction assigned as savings and slippage.

| STATUS: (1 January 1986) | Percent Complete | Completion Schedule |
|---|---|---|
| Levees | 86 | Sep 87 |
| Chena River Dam | 100 | Sep 83 |
| Initial Development | 94 | Sep 87 |

PHYSICAL DATA

| | |
|---|---|
| Chena River Dam | |
| Length (ft) | 40,730 |
| Height above streambed (ft) | 50 |
| Flood Control Storage (acre-ft) | 150,500 |
| Levees | |
| Length (ft) | 119,300 |
| Height (ft) | 10.7 |
| Little Chena River Dam (Ultimate Development) | |
| Length (ft) | 5,560 |
| Height (ft) | 104 |
| Flood Control Storage (acre-ft) | 37,900 |
| Relocations | |
| Roads 7.6 miles ($5,858,000) | |
| Alaska Railroad (Fed. owned) 2.3 miles ($3,397,000) | |

Division: North Pacific District: Alaska Region: Alaska

PHYSICAL DATA (cont)

| Lands & Damages | |
|---|---|
| Acres | 20,061 |
| Type | Predominantly woodland in public ownership |
| Improvements | Typical farm and residental units |

Relocations (cont)
Utilities ($966,000)
Haines-Fairbanks POL Pipeline (Fed. owned) ($235,000)
Tank Trail (Fed. owned) ($407,000)

JUSTIFICATION: The project will protect the city of Fairbanks, adjacent urban and rural areas and Fort Wainwright, a military base. The area to be protected comprises approximately 73,000 acres with an estimated value of approximately $2.5 billion. During the flood of August 1967 over 95 percent of the city of Fairbanks was inundated with water depths up to 8 feet in the downtown business area. This flood paralyzed all forms of community activities and facilities, caused the loss of seven lives, and resulted in damages in excess of $84,500,000. A recurrence of a flood of the 1967 magnitude would cause damages estimated at $439,000,000, all of which would be prevented by the project. Average annual benefits are listed below:

| Average Annual Benefits | Amount (1 October 1985) |
|---|---|
| Flood Control | $62,150,000 |
| Employment | 640,000 |
| TOTAL | $62,790,000 |

FISCAL YEAR 1987: The requested amount of $7,000,000 will be applied as follows:

| | Amount |
|---|---|
| Continue Dam Feature | $ 1,093,000 |
| Continue Recreation Feature | 97,000 |
| Continue Permanent Operating Equipment | 95,000 |
| Continue Construction of Levee & Drainage Facilities | 4,097,000 |
| Building, Grounds, and Utilities | 717,000 |
| Engineering and Design | 432,000 |
| Supervision and Administration | 469,000 |
| TOTAL | $ 7,000,000 |

NON-FEDERAL COST: The initial investment required of local interests in construction of the project is estimated at $12,598,000, broken down as follows:

| | |
|---|---|
| Recreation | $ 2,183,000 |
| Relocation of Roads, Utilities, etc. | 3,559,000 |
| Lands for Levees & Interior Drainage (2,600 acres) | 6,856,000 |
| TOTAL | $12,598,000 |

Local interests are also required to: operate and maintain levees and interior drainage facilities; prescribe and enforce regulations to prevent encroachment on channel capacities and ponding areas; and provide regulation against unwise future use of the overflow area by encouraging flood-proofing, land planning, and flood plain management. The annual cost for maintenance and operation of the levee and interior drainage facilities is estimated at $153,000.

STATUS OF LOCAL COOPERATION: The Fairbanks North Star Borough has met the standard local assurance requirements with respect to the basic flood control project. In addition, the Borough Assembly passed an ordinance on 28 September 1978 approving the expenditure of Borough funds to meet cost-sharing requirements under PL 89-72. A cost-sharing contract with the Borough was executed and signed by the Secretary of the Army on 2 July 1982.

COMPARISON OF FEDERAL COST ESTIMATE: The current Federal Cost Estimate of $209,000,000 is a decrease of $54,000,000 over the latest estimate ($263,000,000) submitted to Congress. This change includes decreases of $54,531,000 in the levee feature due to elimination of most of the remaining groins, $333,000 in the land and damages feature, $350,000 in the permanent operating equipment and $1,000,000 in the dam feature due to reduction of contingencies. These decreases were partially offset by increases of $50,000 in the recreation facilities feature for addition of a foot bridge, $1,075,000 in the dam feature for improvement to the floodway and addition of the Nike site demolition ($445,000), addition of surveying and monumentation contract ($378,000) and various studies ($252,000) in the levee protection Phase 1 contract and $1,089,000 in the Engineering and Design, and Supervision and Administration features due to reanalysis of requirements.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT:

a. The final environmental statement was submitted to Council on Environmental Quality on 27 October 1971. An environmental impact statement supplement covering the Tanana River levee protection system and the segment of levee near the airport was filed with the Environmental Protection Agency on 7 July 1980.

b. The provision of Section 404 of the Clean Water Act has been met by a Section 404 Evaluation Report signed by the District Engineer on 15 December 1977 for project features other than the Tanana River levee protective system and the levee extension near Fairbanks International Airport. Section 404 requirements for the levee protective system were met by obtaining a Certificate of Reasonable assurance under Section 401 for completion of the levee from the Alaska Department of Environmental Conservation on 14 November 1980. This will complete Section 404 requirements for Phase III levee completion.

OTHER INFORMATION: Funds for initation of preconstruction planning were appropriated in FY 1970 and for construction in FY 1973. The planned staged construction to bring the levee back to design grade by correcting for permafrost degradation, and the construction of the levee protection not completed by FY 1987 will be deferred.

## HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE

Division: North Pacific
District: Alaska

Project: Chena River Lakes, Fairbanks, Alaska

|  |  | Estimates Presented to Congress ($1,000) |  |  |  |
|---|---|---|---|---|---|
| Item | Original Baseline | Cumulative Change | Last | Incremental Change | Current |
| Federal Cost<br>(Price Level) | [illegible]<br>[illegible] |  | [illegible] 2/ |  | [illegible] 2/ |
| Reason for Change |  | [illegible] |  | [illegible] |  |
| a. Price Escalation |  | [illegible] |  | [illegible] |  |
| b. Design Changes |  | [illegible] |  |  |  |
| c. Additional Function Added Under General Authorization |  | [illegible] |  |  |  |
| d. Authorized Modification |  |  |  |  |  |
| e. Bids (Contract Award) and Other Estimating Adjustments |  | [illegible] |  | [illegible] |  |
| f. Schedule Changes |  |  |  | [illegible] |  |
| g. Sundry |  | [illegible] 1/ |  |  |  |
| h. Real Estate |  | [illegible] |  |  |  |

1/ Deferment of Little Chena Dam ([illegible]) and [illegible] and Deletion of [illegible] ([illegible]).

2/ Includes an allowance for inflation through the construction period.

REPORTS CONTROL SYMBOL:

| | |
|---|---|
| APPROPRIATION TITLE: CONSTRUCTION GENERAL | CLASSIFICATION:<br>FLOOD CONTROL |

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM | PROJECT COST ESTIMATE | TOTAL TO 30 SEP 19 85 | CURRENT FY 19 86 | BUDGET FY 19 87 | BALANCE TO COMPLETE AFTER FY 19 87 |
|---|---|---|---|---|---|---|
| | (a) | (b) | (c) | (d) | (e) | (f) |
| 1 | LANDS AND DAMAGES | 13,437,000 | 13,437,000 | | | |
| 2 | RELOCATION | 10,161,000 | 10,161,000 | | | |
| 3 | RESERVOIRS | 5,953,000 | 5,953,000 | | | |
| 4 | DAMS | 91,717,000 | 90,218,000 | 406,000 | 1,093,000 | |
| 5 | FISH AND WILD LIFE FACILITIES | 7,011,000 | 7,011,000 | | | |
| 6 | LEVEE AND DRAINAGE FACILITIES | 43,546,000 | 37,052,000 | 605,000 | 4,097,000 | 1,792,000 |
| 7 | RECREATION FACILITIES | 4,230,000 | 4,054,000 | | 176,000 | |
| 8 | CULTURAL RESOURCES PRESERVATION | 121,000 | 121,000 | | | |
| 9 | BUILDING, GROUNDS AND UTILITIES | 2,804,000 | 80,000 | 2,007,000 | 717,000 | |
| 10 | PERMANENT OPERATING EQUIPMENT | 1,919,000 | 1,824,000 | | 95,000 | |
| 11 | ENGINEERING AND DESIGN | 17,490,000 | 16,251,000 | 794,000 | 445,000 | |
| 12 | SUPERVISION AND ADMINISTRATION | 12,819,000 | 12,006,000 | 332,000 | 481,000 | |
| 13 | | | | | | |
| 14 | TOTAL APPLIED COST | 211,208,000 | 198,168,000 | 4,144,000 | 7,104,000 | 1,792,000 |
| 15 | UNDISTRIBUTED COST - NONE | | | | | |
| 16 | TOTAL PROJECT COST | 211,208,000 | 198,168,000 | 4,144,000 | 7,104,000 | 1,792,000 |
| 17 | Pending Adjustments - NONE | | | | | |
| 18 | TOTAL COST | 211,208,000 | 198,168,000 | 4,144,000 | 7,104,000 | 1,792,000 |
| 19 | Undelivered Orders | | 95,000 | -95,000 | | |
| 20 | TOTAL OBLIGATIONS | 211,208,000 | 198,263,000 | [illegible],049,000 | 7,104,000 | 1,792,000 |
| 21 | Federal Funds | (209,000,000) | (196,159,000) | (4,049,000) | (7,000,000) | (1,792,000) |
| 22 | Non-Federal Contributions | (2,208,000) | (2,104,000) | | (104,000) | |
| 23 | | | | | | |
| 24 | METHOD OF FINANCING | | | | | |
| 25 | Federal Funds | | | | | |
| 26 | Allocations | 209,000,000 | 196,208,000 | 4,000,000* | | |
| 27 | Unobligated Carryover from Prev. Yr. | | -49,000 | 49,000 | | |
| 28 | Total Funds Avail. for Obligation | | 196,159,000 | 4,049,000 | | |
| 29 | Appropriations Required | | | | | |
| 30 | | | | | | |
| 31 | Non-Federal Funds | 2,208,000 | 2,104,000 | | 104,000 | |
| 32 | Contributions Required | | | | | |
| 33 | * Reflects $1,000,000 reduction assigned as Savings & Slippage in FY 86 | | | | | |

| | | | |
|---|---|---|---|
| EFFECTIVE DATE<br>1 JAN 86 | DIVISION NORTH PACIFIC<br>DISTRICT ALASKA | REGION ALASKA<br>BASIN YUKON-KUSKOKWIM | PROJECT<br>CHENA RIVER LAKES, ALASKA |

ENG FORM 1 SEP 78 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE.

6 FEB 1986

# LOWER COLUMBIA RIVER BASIN BANK PROTECTION
# OREGON AND WASHINGTON

---

DIVISION: NORTH PACIFIC DISTRICT: PORTLAND, OREGON REGION: COLUMBIA NORTH PACIFIC

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APPROPRIATION TITLE: Construction, General - Local Protection Projects (Flood Control)

PROJECT: Lower Columbia River Basin Bank Protection, Oregon and Washington (Continuing)

LOCATION: Ninety-six locations along the Columbia River and its major tributaries in the reach from river mile 125 to the sea in Oregon and Washington.

AUTHORIZATION: 1950 Flood Control Act

BENEFIT-COST RATIO: The remaining benefit-remaining cost ratio is 1.9 to 1 at 2-1/2 percent. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1961) was 1.4 to 1. The benefit-cost ratio was based on the project functioning independently.

| SUMMARIZED FINANCIAL DATA | | | Accumulated % of Est. Fed. Cost |
|---|---|---|---|
| Estimated Federal Cost | | $25,400,000 | |
| Estimated Non-Federal Cost | | 267,000 | |
| Cash Contribution | None | | |
| Other Costs | $267,000 | | |
| Total Estimated Project Cost | | $25,667,000 | |
| Allocations to 30 September 1985 | | 17,725,000 | |
| Conference Allowance for FY 1986 | | 1,500,000 | |
| Allocation for FY 1986 | | 1,725,000 1/ | |
| Allocations to Date | | 19,450,000 | 77 |
| Allocation Requested for FY 1987 | | 1,500,000 | 82 |
| Scheduled Balance to Complete after FY 1987 | | 2,200,000 | |
| Unscheduled Balance to Complete after FY 1987 | | 2,250,000 | |

| STATUS: (1 Jan 86) | PERCENT COMPLETE | COMPLETION SCHEDULE |
|---|---|---|
| Prior Work: | | |
| 81 Locations | - | |
| Entire Project (96 Locations) | 83 | Unscheduled |

1/ Reflects transfer of $225,000 to the project.

## PHYSICAL DATA

Entire Project:

Bank Stabilization - Dumped stone; total length approximately 224,000 linear feet at 96 locations.

Division: North Pacific District: Portland Region: Columbia-North Pacific
Lower Columbia River Basin Bank Protection, OR & WA

JUSTIFICATION: Bank protection improvements are necessary to prevent further bank erosion at critical locations along the Lower Columbia River and tributaries. The flood plain downstream from mile 125 includes much high-value agricultural and industrial property. Bank protection is needed to eliminate the threat to many levees protecting much of this area and for stabilization in other areas where bank erosion is critical. River current and wave wash have caused severe erosion which can be stopped only by construction of protective works. Annual flood control benefits are estimated to be $2,350,000 based on 1 October 1985 prices.

FISCAL YEAR 1987: The requested amount of $1,500,000 will be applied as follows:

| | Amount |
|---|---|
| Sauvie Island Drainage District, Oregon | |
| Initiate Construction of Anderson Location | $109,000 |
| Complete Construction of Lerch Location | 128,000 |
| Multnomah County Drainage District No. 1, Oregon | |
| Complete Construction of 128th Ave Location | 338,000 |
| Wahkiakum Drainage District No. 1, Oregon | |
| Initiate Construction of Duncan Cove Location | 337,000 |
| Peninsula Drainage District No. 2, Oregon | |
| Initiate Construction of Columbia Slough Location | 282,000 |
| Engineering and Design | 144,000 |
| Supervision and Administration | 162,000 |
| TOTAL | $1,500,000 |

NON-FEDERAL COST: Local interests are required to furnish all lands, easements and rights-of-way at an estimated cost of $267,000. The sponsors are required to maintain the bank protection upon its completion at an estimated average annual cost of $365,000.

STATUS OF LOCAL COOPERATION: Informal assurances were received for Columbia Slough, Duncan Cove, Lerch, Anderson and 128th Avenue Locations on 16 February 1983, 14 May 1985, 4 June 1984 and 4 June 1984 and 26 September 1985 respectively. Formal assurances and rights-of-way will be furnished for each location prior to start of construction.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $25,400,000 is the same as the latest estimate submitted to Congress. This includes a decrease of $624,000 for adjustments in the estimated inflation allowance through the construction period, offset by a $300,000 increase in Engineering & Design and Supervision & Administration due to reanalysis of requirements and a net increase of $324,000 in miscellaneous construction feature costs.

STATUS OF ENVIRONMENTAL IMPACT STATEMENTS AND COMPLIANCE WITH CLEAN WATER ACT:

The Final Environmental Impact Statement was filed with CEQ on 31 January 1973. A Supplement was filed with CEQ on 1 October 1976. Each location listed below will be covered under subsequent environmental assessments with Findings of No Significant Impacts (FONSI) or an EIS supplement prior to the start of the applicable construction season.

The provisions of Section 404 of the Clean Water Act are scheduled to be met as follows:

| Location | Preliminary Section 404(b)(1) Evaluation | Public Notice Issued | State Certification | Signature of District Engineer on the Findings of Fact Report |
|---|---|---|---|---|
| Multnomah County Drainage District No. 1, OR | | | | |
| 128th Ave Location | Mar 86 | Mar 86 | 3rd Qtr FY 86 | 3rd Qtr FY 86 |
| Sauvie Island Drainage District, OR | | | | |
| Lerch Location | 18 Mar 85 | 18 Mar 85 | 26 Apr 85 | 28 May 85 |
| Anderson Location | 2nd Qtr FY 87 | 2nd Qtr FY 87 | 3rd Qtr FY 87 | 3rd Qtr FY 87 |
| Peninsula Drainage District No. 2, OR | | | | |
| Columbia Slough Location | 2nd Qtr FY 87 | 2nd Qtr FY 87 | 3rd Qtr FY 87 | 3rd Qtr FY 87 |
| Wahkiakum Co. Cons. D.D. No. 1, WA | | | | |
| Duncan Cove Location | 2nd Qtr FY 87 | 2nd Qtr FY 87 | 3rd Qtr FY 87 | 3rd Qtr FY 87 |

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1958 and for construction in FY 1961.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: North Pacific
District: Portland

Project: Lower Columbia River Basin Bank Protection, Oregon and Washington

| Item | Original Baseline | Cumulative Changes | Last | Incremental Change | Current |
|---|---|---|---|---|---|
| | Estimates Presented to Congress ($1,000) | | | | |
| Federal Cost | 8,600 | | 25,400 1/ | | 25,400 1/ 2/ |
| (Price Level) | (Jul 1959) | | | | |
| Reason for Change | | (16,800) 1/ | | (0) 2/ | |
| a. Price Escalation | | 14,931 | | -624 | |
| b. Design Changes | | | | | |
| c. Additional Function Added Under General Authorization | | | | | |
| d. Authorized Modification | | | | | |
| e. Post-Contract Award and Other Estimating Adjustments | | 1,639 | | 624 3/ | |
| f. Schedule Changes | | 200 | | | |
| g. Sundry | | 30 | | | |
| h. Real Estate | | | | | |

1/ Includes an allowance for estimated inflation through the construction period.
2/ Includes -$624 for adjustments in the estimated inflation allowance through the construction period.
3/ Increase due to more detailed estimate.

REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: LOCAL PROTECTION PROJECTS (FLOOD CONTROL)

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM (a) | PROJECT COST ESTIMATE (b) | TOTAL TO 30 SEP 19 85 (c) | CURRENT FY 19 86 (d) | BUDGET FY 19 87 (e) | BALANCE TO COMPLETE AFTER FY 19 87 (f) |
|---|---|---|---|---|---|---|
| 1 | BANK STABILIZATION | 20,556,000 | 13,993,000 | 1,655,000 | 1,194,000 | 3,714,000 |
| 2 | CULTURAL INVESTIGATIONS | 13,000 | 13,000 | 0 | 0 | 0 |
| 3 | ENGINEERING AND DESIGN | 3,069,000 | 2,532,000 | 25,000 | 144,000 | 368,000 |
| 4 | SUPERVISION AND ADMINISTRATION | 1,762,000 | 1,184,000 | 48,000 | 162,000 | 368,000 |
| 5 | | | | | | |
| 6 | TOTAL APPLIED COSTS (FED FUNDS ONLY) | 25,400,000 | 17,722,000 | 1,726,000 | 1,500,000 | 4,450,000 |
| 7 | UNDISTRIBUTED COSTS (NONE) | | | | | |
| 8 | TOTAL PROJECT COSTS (FED FUNDS ONLY) | 25,400,000 | 17,722,000 | 1,728,000 | 1,500,000 | 4,450,000 |
| 9 | PENDING ADJUSTMENTS (NONE) | | | | | |
| 10 | TOTAL COSTS (FED FUNDS ONLY) | 25,400,000 | 17,722,000 | 1,728,000 | 1,500,000 | 4,450,000 |
| 11 | UNDELIVERED ORDERS | | | | | |
| 12 | TOTAL OBLIGATIONS | | 17,722,000 | 1,728,000 | 1,500,000 | 4,450,000 |
| 13 | | | | | | |
| 14 | | | | | | |
| 15 | METHOD OF FINANCING | | | | | |
| 16 | ALLOCATIONS | | 17,725,000 | 1,725,000 1/ | | |
| 17 | UNOBLIGATED CARRYOVER FROM PRIOR YEAR | | | 3,000 | | |
| 18 | TOTAL FUNDS AVAILABLE FOR OBLIGATIONS | | | 1,728,000 1/ | | |
| 19 | APPROPRIATIONS REQUIRED | | | | 1,500,000 | 4,450,000 |
| 20 | | | | | | |
| 21 | | | | | | |
| 22 | 1/ Reflects $225,000 transfer to project. | | | | | |
| 23 | | | | | | |
| 24 | | | | | | |
| 25 | | | | | | |
| 26 | | | | | | |
| 27 | | | | | | |
| 28 | | | | | | |
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| 30 | | | | | | |
| 31 | | | | | | |
| 32 | | | | | | |
| 33 | | | | | | |

| EFFECTIVE DATE | DIVISION / DISTRICT | REGION / BASIN | PROJECT |
|---|---|---|---|
| 1 JAN 86 | DIVISION NORTH PACIFIC<br>DISTRICT PORTLAND, OREGON | REGION COLUMBIA-NORTH PACIFIC<br>BASIN LOWER COLUMBIA RIVER | LOWER COLUMBIA RIVER BASIN-BANK PROTECTION, OR & WA |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE.

# MT. ST. HELENS AND VICINITY, WASHINTON

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DIVISION: NORTH PACIFIC DISTRICT: PORTLAND, OREGON REGION: COLUMBIA NORTH PACIFIC

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APPROPRIATION TITLE: Construction, General - Local Protection Projects (Flood Control)

PROJECT: Mt. St. Helens and Vicinity, Washington (Continuing)

LOCATION: Along the Cowlitz and Toutle Rivers from the slopes of Mt. St. Helens to the confluence of the Cowlitz with the Columbia River (river mile 68) approximately 34 miles downstream from Portland, Oregon. The total distance for the project is 74 river miles, including the lower 20 miles of the Cowlitz, which passes by Castle Rock, Lexington, Kelso and Longview, and the 54 mile length of the main stem and North Fork of the Toutle River from its confluence with the Cowlitz River to Spirit Lake.

AUTHORIZATION: Supplemental Appropriation Act, 1983 (PL 98-63).

BENEFIT TO COST RATIO: The remaining benefit-remaining cost ratio is not applicable because monetary benefits have not been quantified.

| SUMMARIZED FINANCIAL DATA<br>Estimated Total Appropriation Requirement $51,558,000 1/ | | | Accum. % of Est. Fed Cost | STATUS: (1 Jan 1986) | PERCENT COMPLETE | COMPLETION SCHEDULE |
|---|---|---|---|---|---|---|
| Estimated Federal Cost | | $51,558,000 1/ | | Entire Project | | (to be determined) |
| Estimated Non-Federal Cost | | 3,500,000 | | | | |
| Cash Contribution | None | | | | | |
| Other | $3,500,000 | | | | | |
| Total Estimated Project Cost | | 55,058,000 | | | | |
| Allocations to 30 September 1985 | | 32,208,000 | | | | |
| Conference Allowance for FY 1986 | | 10,000,000 | | | | |
| Allocation for FY 1986 | | 9,350,000 2/ | | | | |
| Allocations to Date | | 41,558,000 | N/A | | | |
| Allocation Requested for FY 1987 | | 10,000,000 | N/A | | | |
| Scheduled Balance to Complete after FY 1987 | | (to be determined) | | | | |
| Unscheduled Balance to Complete after FY 1987 | | (to be determined) | | | | |

1/ Estimated through FY 1987 only.
2/ Reflects $650,000 reduction assigned as savings and slippage.

Division: North Pacific District: Portland Region: Columbia-North Pacific
Mt. St. Helens and Vicinity, WA

## PHYSICAL DATA

The Supplemental Appropriation Act, of 1983 (PL 98-63) authorized the Corps of Engineers to implement and maintain flood control measures on the Cowlitz and Toutle Rivers to assure 100-year flood protection for developed areas along the Cowlitz and to prevent blockage of the Columbia River due to sediment inflow. This authorization remains in effect until implementation of permanent solutions for flood control and navigation. The 100 year level of flood protection as authorized is classified as temporary emergency protection based on the existing emergency levee structures along the Cowlitz River.

The project consists of dredging on the Toutle and Cowlitz Rivers, a sediment monitoring program, and other miscellaneous work (e.g. emergency levee structure rehabilitation). Data from the monitoring program is used to determine current and project future levels of flood protection and to identify problem areas and corrective measures necessary to provide protection as authorized. A plan of action is developed annually based on results of the monitoring program. For instance it is estimated that 5-6 million cubic yards (mcy) of sediment would deposit in the Cowlitz River during the winter of 1985-86 (assuming no dredging and average sediment yield), reducing the level of flood protection to below 100-year at Castle Rock by March 1986. The plan of action for FY 1986 primarily consists of dredging 4.3 mcy from the lower Toutle River at sediment stabilization basin LT-3 (River Miles 10.5 to 13.5) to reduce deposition in the Cowlitz River and provide at least 100-year temporary emergency flood protection at Castle Rock throughout the winter. Assuming average sediment yield, similar measures would be required each year. Above normal sediment yield would result in increased deposition requiring additional work to provide a 100-year level of temporary emergency flood protection.

JUSTIFICATION: The eruption of Mt. St. Helens in 1980 resulted in the movement of sediment creating a threat of flooding and navigation disruption in southwestern Washington. This project will provide substantial interim flood control benefits to the developed areas along the Cowlitz River.

FISCAL YEAR 1987: The requested amount of $10,000,000 will be applied as follows:

| | |
|---|---|
| Continue Dredging | $ 7,720,000 |
| Continue Sediment Monitoring Program | 1,080,000 |
| Engineering and Design | 500,000 |
| Supervision and Administration | 700,000 |
| Total | $10,000,000 |

NON-FEDERAL COST: Local sponsors have provided lands, easements and rights-of-way required for dredging. The total estimated cost to local interests through FY 1987 is $3,500,000 of which the State of Washington has spent approximately $2,500,000 to procure disposal sites for dredged material.

STATUS OF LOCAL COOPERATION: State of Washington statutes give the State Department of Transportation the authority for land acquisition for this project. The State of Washington has agreed by signing Local Cooperation Agreements to act as the local sponsor. State funds have been appropriated for acquisition of lands and related expenses for Mt. St. Helens recovery operations. Cowlitz and Toutle Rivers Local Cooperation Agreement with the State of Washington, dated 15 June 1983, includes dredging between River Miles 13.4 and 19.1 on the Cowlitz River and at sediment stabilization basin LT-1 (River Miles 1.7 to 3.2) on the Toutle River. This agreement terminates 1 January 1988. A similar agreement relative to the sediment stabilization basin LT-3 (River Miles 10.5 to 13.5) on the Toutle River terminates 1 January 1990.

Local cooperation agreements which were obtained for PL 84-99 emergency work (such as temporary levees) would have to be renegotiated for similar work under this authority.

New agreements or supplements to existing ones would need to be developed for work in areas not covered by existing agreements.

COMPARISON OF FEDERAL COST ESTIMATE: The current Federal cost estimate of $51,558,000 is an increase of $7,983,000 over the latest estimate ($43,575,000) submitted to Congress. This increase is due to the addition of $10,000,000 of FY 1987 program requirements to the project cost estimate and decreases of $2,017,000 primarily due to quantity underruns on LT-1 dredging contract and revised amounts for remaining work.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT:

NEPA compliance is accomplished by annual preparation of an environmental assessment in anticipation of a Finding of No Significant Impact. Compliance with the Clean Water Act is accomplished each year by preparation and public review of a Section 404 Water Quality Evaluation and obtaining a Section 401 Water Quality Certification from the State of Washington.

OTHER INFORMATION: Construction was initiated in FY 1983 with Productive Employment Appropriations Act (PL 98-8) funds.

The allocation requested for FY 1987 represents a minimum program which may require additional funding to provide 100-year temporary emergency flood protection. The plan of action for FY 1987 will be developed based on actual sediment deposition during the winter of 1985-86.

## HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

**Division:** North Pacific **Project:** Mt. St. Helens and Vicinity, Washington
**District:** Portland

| | Estimates Presented to Congress ($1,000) | | | | |
|---|---|---|---|---|---|
| Item | Original Baseline | Cumulative Changes | Last | Incremental Change | Current |
| Federal Cost<br>(Price Level) | 43,575 1/<br>(FY 1986) | N/A | 43,575 1/ | 7,983 | 51,558 1/ |
| Reason for Change | | | | (7,983) | |
| a. Price Escalation | | | | | |
| b. Design Changes | | | | | |
| c. Additional Function Added Under General Authorization | | | | | |
| d. Authorized Modification | | | | | |
| e. Post-Contract Award and Other Estimating Adjustments | | | | | |
| f. Schedule Changes | | | | 7,983 | |
| g. Sundry | | | | | |
| h. Real Estate | | | | | |

1/ Includes an allowance for estimated inflation through the construction period.

REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: FLOOD CONTROL - LOCAL PROTECTION
PROJECT SPECIFICALLY AUTHORIZED BY CONGRESS

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM | PROJECT COST ESTIMATE | TOTAL TO 30 SEP 19 85 | CURRENT FY 1986 | BUDGET FY 1987 | BALANCE TO COMPLETE AFTER FY 19 87 |
|---|---|---|---|---|---|---|
| | (a) | (b) | (c) | (d) | (e) | (f) |
| 1 | CHANNELS AND CANALS | 47,622,000 | 30,484,000 | 8,336,000 | 8,800,000 | |
| 2 | ENGINEERING AND DESIGN | 1,747,000 | 782,000 | 465,000 | 500,000 | |
| 3 | SUPERVISION AND ADMINISTRATION | 2,189,000 | 791,000 | 698,000 | 700,000 | |
| 4 | | | | | | |
| 5 | | | | | | |
| 6 | TOTAL APPLIED COST (C OF E FUNDS ONLY) | 51,558,000 | 32,057,000 | 9,501,000 | 10,000,000 | |
| 7 | UNDISTRIBUTED COST (NONE) | | | | | |
| 8 | TOTAL PROJECT COST (C OF E FUNDS ONLY) | 51,558,000 | 32,057,000 | 9,501,000 | 10,000,000 | |
| 9 | PENDING ADJUSTMENTS (NONE) | | | | | |
| 10 | TOTAL COST (C OF E FUNDS ONLY) | 51,558,000 1/ | 32,057,000 | 9,501,000 | 10,000,000 | |
| 11 | UNDELIVERED ORDERS | | 40,000 | -40,000 | | |
| 12 | TOTAL OBLIGATIONS | | 32,097,000 | 9,461,000 | 10,000,000 | |
| 13 | | | | | | |
| 14 | | | | | | |
| 15 | METHOD OF FINANCING | | | | | |
| 16 | FEDERAL FUNDS (C OF E FUNDS ONLY) | | | | | |
| 17 | ALLOCATIONS | | 32,208,000 | 9,350,000 2/ | | |
| 18 | UNOBLIGATED CARRYOVER FROM PRIOR YEAR | | | 111,000 | | |
| 19 | TOTAL FUNDS AVAILABLE FOR OBLIGATION | | | 9,461,000 | | |
| 20 | APPROPRIATION REQUIRED | | | | 10,000,000 | (to be determined) |
| 21 | | | | | | |
| 22 | 1/ Estimated through FY 1987 only. | | | | | |
| 23 | 2/ Reflects $650,000 reduction assigned as savings and slippage. | | | | | |
| 24 | | | | | | |
| 25 | | | | | | |
| 26 | | | | | | |
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| 30 | | | | | | |
| 31 | | | | | | |
| 32 | | | | | | |
| 33 | | | | | | |

| EFFECTIVE DATE | DIVISION / DISTRICT | REGION / BASIN | PROJECT |
|---|---|---|---|
| 1 JAN 86 | NORTH PACIFIC<br>PORTLAND, OREGON | COLUMBIA-NORTH PACIFIC<br>LOWER COLUMBIA | MT. ST. HELENS AND VICINITY<br>WASHINGTON |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE.

# WILLAMETTE RIVER BASIN BANK PROTECTION, OREGON

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DIVISION: NORTH PACIFIC DISTRICT: PORTLAND, OREGON REGION: COLUMBIA NORTH PACIFIC

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APPROPRIATION TITLE: Construction, General - Local Protection Projects (Flood Control)

**PROJECT: Willamette River Basin Bank Protection, Oregon (Continuing)**

**LOCATION:** Along the banks of the Willamette River from New Era (river mile 33) to a point above Eugene at the confluence of the Middle Fork Willamette and the Coast Fork (river mile 185), a distance of 152 miles, and along 287 river miles of the lower reaches of nine of the major tributaries.

**AUTHORIZATION:** 1936, 1938, and 1950 Flood Control Acts

**BENEFIT TO COST RATIO:** The remaining benefit-remaining cost ratio is 2.2 to 1 at 2-1/2 percent. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1938) is not available. However, the benefit-cost ratio for the project based upon the 1938 Flood Control Act as presented in House Document No. 544, 75th Congress, 3rd Session was 1.6 to 1, which was based on a system analysis with other flood control projects in the Willamette Basin. The current benefit-cost ratio is based on the Willamette Bank Protection project functioning independently.

| SUMMARIZED FINANCIAL DATA | | | Accumulated % of Est. Fed Cost |
|---|---|---|---|
| Estimated Federal Cost | | $29,800,000 | |
| Estimated Non-Federal Cost | | 369,000 | |
| Cash Contribution | None | | |
| Other Costs | $369,000 | | |
| Total Estimated Project Cost | | 30,169,000 | |
| Allocations to 30 September 1985 | | 23,966,000 | |
| Conference Allowance for FY 1986 | | 1,500,000 | |
| Allocation for FY 1986 | | 775,000 1/ | |
| Allocations to Date | | 24,741,000 | 83 |
| Allocation Requested for FY 1987 | | 1,500,000 | 88 |
| Scheduled Balance to Complete after FY 1987 | | 1,200,000 | |
| Unscheduled Balance to Complete after FY 1987 | | 2,359,000 | |

| STATUS: (1 Jan 1986) | PERCENT COMPLETE | COMPLETION SCHEDULE |
|---|---|---|
| Prior work, 230 locations | - | |
| Entire Project | 96 | Unscheduled |

1/ Reflects transfer of $725,000 from the project.

Division: North Pacific District: Portland Region: Columbia-North Pacific

Willamette River Basin Bank Protection, OR

## PHYSICAL DATA

Entire Project:
Bank stabilization - dumped stone, drift barriers
and channel improvements; approximately 236 locations,
510,000 linear feet.

JUSTIFICATION: This project is an integral part of the comprehensive plan for flood control and other purposes in the Willamette River Basin. Prolonged periods of near bankfull flow, which is a normal condition during reservoir releases following floods, will result in severe bank erosion. Such erosion is a continuing process. Erosion destroys productive farmlands, roads, bridges and other improvements. Erosion also opens overflow channels and the resulting overflow destroys valuable property and cuts off areas from their normal access requiring construction of new roads and bridges. The increase in population and agricultural development of the Willamette Valley has resulted in subdivision of many tracts which are intensively cultivated. Continuation of the bank protection program is necessary to avoid substantial loss by erosion of irreplaceable fertile land. Continued unchecked erosion at such locations not only increases the cost of corrective work but adversely affects downstream locations and channel capacities. Annual flood control benefits are estimated to be $3,266,000 based on 1 October 1985 prices.

FISCAL YEAR 1987: The requested amount of $1,500,000 will be applied as follows:

| | Amount |
|---|---|
| Willamette River and Middle Fork | |
| Initiate Construction of Second Lake Location | $1,016,000 |
| Initiate and Complete Construction of East Independence Bridge Location | 118,000 |
| Revegetation | 20,000 |
| Engineering and Design | 226,000 |
| Supervision and Administration | 120,000 |
| Total | $1,500,000 |

NON-FEDERAL COST: Local interests are required to furnish all lands, easements and rights-of-way at an estimated cost of $369,000. The sponsors are required to maintain the bank protection upon its completion at an estimated average annual cost of $214,000.

STATUS OF LOCAL COOPERATION: Informal assurances were received for East Independence Bridge and Finnicum locations on 16 February 1984, and 2 April 1985 respectively. Informal assurances will be obtained for Second Lake by June 1986. Formal assurances and rights-of-way for all locations will be furnished prior to start of construction.

**COMPARISON OF FEDERAL COST ESTIMATES:** The current Federal cost estimate of $29,800,000 is a decrease of $1,600,000 from the latest estimate ($31,400,000) submitted to Congress. This change includes decreases of $527,000 for adjustments in the estimated inflation allowance through the construction period and $1,073,000 for reduced scope of work and placement costs on the Minto Br[illegible]ion.

## STATUS OF ENVIRONMENTAL IMPACT STATEMENTS AND COMPLIANCE WITH CLEAN WATER ACT:

The Final Environmental Impact Statement was filed with CEQ on 14 July 1975. Each location listed below will be covered under subsequent Environmental Assessment Reports with Findings of No Significant Impacts (FONSI) or EIS supplements prior to contract advertisement.

The provisions of Section 404 of the Clean Water Act are scheduled to be met as follows:

| Location | Preliminary Section 404(b)(1) Evaluation | Public Notice Issued | State Certification | Signature of District Engineer on the Findings of Fact Report |
|---|---|---|---|---|
| **Willamette River and Middle Fork** | | | | |
| East Independence Bridge Location | 2nd Qtr FY 87 | 2nd Qtr FY 87 | 3rd Qtr FY 87 | 3rd Qtr FY 87 |
| Finnicum Location | Mar FY 86 | Mar FY 86 | 3rd Qtr FY 86 | 3rd Qtr FY 86 |
| Second Lake Location | 2nd Qtr FY 87 | 2nd Qtr FY 87 | 3rd Qtr FY 87 | 3rd Qtr FY 87 |

**OTHER INFORMATION:** Funds to initiate construction were appropriated in FY 1938.

## HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

**Division:** North Pacific
**District:** Portland
**Project:** Willamette River Basin Bank Protection, Oregon

| Item | Estimates Presented to Congress ($1,000)<br>Original Baseline | Cumulative Changes | Last | Incremental Change | Current |
|---|---|---|---|---|---|
| Federal Cost<br>(Price Level) | 2,430<br>(Jun 1936) | | 31,400 2/ | | 29,800 2/ 3/ |
| Reason for Change | | (28,970) 2/ | | (-1,600) 3/ | |
| a. Price Escalation | | 11,901 | | -527 | |
| b. Design Changes | | | | | |
| c. Additional Function Added Under General Authorization | | | | | |
| d. Authorized Modification | | 11,006 1/ | | | |
| e. Post-Contract Award and Other Estimating Adjustments | | 5,634 | | | |
| f. Schedule Changes | | 414 | | | |
| g. Sundry | | 15 | | | |
| h. Real Estate | | | | | |

1/ Additional work authorized by Congress under the Flood Control Act of 1938, Flood Control Act of 1950, and letters from Senate Committee on Public Works, dated 6 October 1971, and House Committee on Public Works dated 30 September 1971.

2/ Includes an allowance for estimated inflation through the construction period.

3/ Includes -$527,000 for adjustments in the estimated inflation allowance through the construction period.

REPORTS CONTROL SYMBOL:

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: LOCAL PROTECTION PROJECTS (FLOOD CONTROL)

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

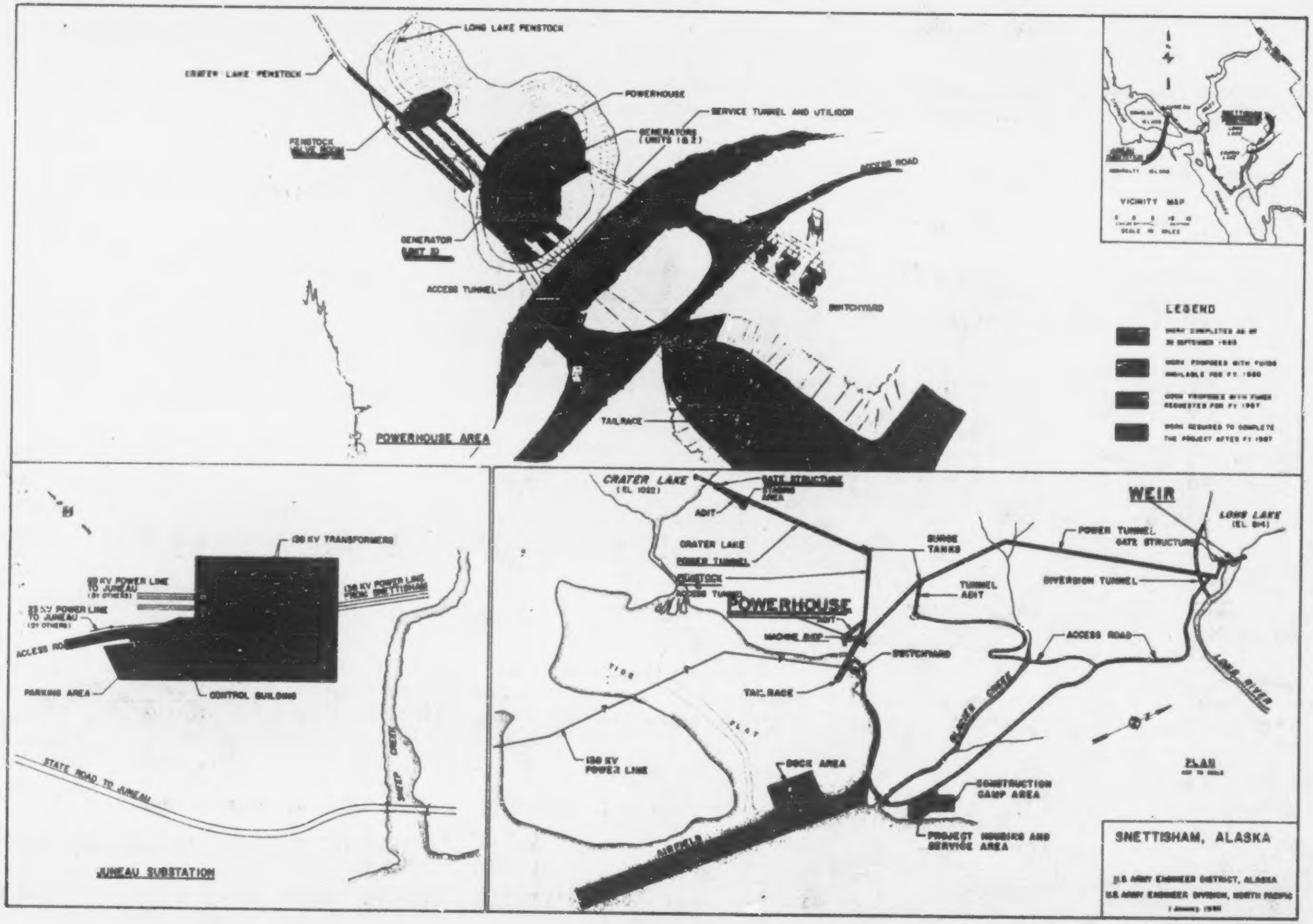
| LINE NO | ITEM (a) | PROJECT COST ESTIMATE (b) | TOTAL TO 30 SEP 19 85 (c) | CURRENT FY 19 86 (d) | BUDGET FY 19 87 (e) | BALANCE TO COMPLETE AFTER FY 19 87 (f) |
|---|---|---|---|---|---|---|
| 1 | BANK STABILIZATION | 23,189,000 | 18,296,000 | 590,000 | 1,154,000 | 3,149,000 |
| 2 | ENGINEERING AND DESIGN | 4,120,000 | 3,595,000 | 164,000 | 226,000 | 135,000 |
| 3 | SUPERVISION AND ADMINISTRATION | 2,491,000 | 2,040,000 | 56,000 | 120,000 | 275,000 |
| 4 | | | | | | |
| 5 | | | | | | |
| 6 | TOTAL APPLIED COSTS (FED FUNDS ONLY) | 29,800,000 | 23,931,000 | 810,000 | 1,500,000 | 3,559,000 |
| 7 | UNDISTRIBUTED COSTS (NONE) | | | | | |
| 8 | TOTAL PROJECT COSTS (FED FUNDS ONLY) | 29,800,000 | 23,931,000 | 810,000 | 1,500,000 | 3,559,000 |
| 9 | PENDING ADJUSTMENTS (NONE) | | | | | |
| 10 | TOTAL COSTS (FED FUNDS ONLY) | 29,800,000 | 23,931,000 | 810,000 | 1,500,000 | 3,559,000 |
| 11 | UNDELIVERED ORDERS | | 20,000 | -20,000 | | |
| 12 | TOTAL OBLIGATIONS | | 23,951,000 | 790,000 | 1,500,000 | 3,559,000 |
| 13 | | | | | | |
| 14 | | | | | | |
| 15 | | | | | | |
| 16 | METHOD OF FINANCING | | | | | |
| 17 | ALLOCATIONS | | 23,966,000 | 775,000 | | |
| 18 | UNOBLIGATED CARRYOVER FROM PRIOR YEAR | | | 15,000 | | |
| 19 | TOTAL FUNDS AVAILABLE FOR OBLIGATIONS | | | 790,000 1/ | | |
| 20 | APPROPRIATIONS REQUIRED | | | | 1,500,000 | 3,559,000 |
| 21 | | | | | | |
| 22 | 1/ Reflects $725,000 transfer from | | | | | |
| 23 | project. | | | | | |
| 24 | | | | | | |
| 25 | | | | | | |
| 26 | | | | | | |
| 27 | | | | | | |
| 28 | | | | | | |
| 29 | | | | | | |
| 30 | | | | | | |
| 31 | | | | | | |
| 32 | | | | | | |
| 33 | | | | | | |

| EFFECTIVE DATE | DIVISION | REGION | PROJECT |
|---|---|---|---|
| 1 JAN 86<br>(Revised 28 F | NORTH PACIFIC<br>DISTRICT PORTLAND, OREGON | COLUMBIA-NORTH PACIFIC<br>BASIN WILLAMETTE | WILLAMETTE RIVER BASIN<br>BANK PROTECTION, OREGON |

ENG FORM 1 SEP 74 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE.

# SNETTISHAM, ALASKA

DIVISION: NORTH PACIFIC DISTRICT: ALASKA REGION: ALASKA

LONG LAKE PENSTOCK
CRATER LAKE PENSTOCK
PENSTOCK VALVE ROOM
POWERHOUSE
SERVICE TUNNEL AND UTILIDOR
GENERATORS (UNITS 1 & 2)
ACCESS ROAD
GENERATOR (UNIT 3)
ACCESS TUNNEL
SWITCHYARD
TAILRACE
POWERHOUSE AREA
VICINITY MAP
SCALE IN MILES
LEGEND
WORK COMPLETED AS OF 30 SEPTEMBER 1965
WORK PROPOSED WITH FUNDS AVAILABLE FOR FY 1966
WORK PROPOSED WITH FUNDS REQUESTED FOR FY 1967
WORK REQUIRED TO COMPLETE THE PROJECT AFTER FY 1967
138 KV TRANSFORMERS
69 KV POWER LINE TO JUNEAU (BY OTHERS)
23 KV POWER LINE TO JUNEAU (BY OTHERS)
138 KV POWER LINE FROM SNETTISHAM
ACCESS ROAD
PARKING AREA
CONTROL BUILDING
STATE ROAD TO JUNEAU
JUNEAU SUBSTATION
CRATER LAKE (EL 1022)
GATE STRUCTURE
ADIT
CRATER LAKE POWER TUNNEL
PENSTOCK
ACCESS TUNNEL
POWERHOUSE
MACHINE SHOP
SWITCHYARD
TAILRACE
138 KV POWER LINE
TIDE FLAT
DOCK AREA
AIRFIELD
SURGE TANKS
TUNNEL ADIT
WEIR
POWER TUNNEL GATE STRUCTURE
LONG LAKE (EL 814)
DIVERSION TUNNEL
ACCESS ROAD
LONG RIVER
GLACIER CREEK
CONSTRUCTION CAMP AREA
PROJECT HOUSING AND SERVICE AREA
PLAN
NOT TO SCALE
SNETTISHAM, ALASKA
U.S. ARMY ENGINEER DISTRICT, ALASKA
U.S. ARMY ENGINEER DIVISION, NORTH PACIFIC
1 January 1966

APPROPRIATION TITLE: Construction, General - Multiple-Purpose Power Projects

PROJECT: Snettisham, Alaska (Continuing)

LOCATION: Near the mouth of the Speel River, 28 air-miles southeast of Juneau, Alaska.

AUTHORIZATION: 1962 Flood Control Act

BENEFIT-TO-COST RATIO: The remaining benefit-remaining cost ratio is 9.0 to 1 at 3-1/8 per cent. The benefit-to-cost ratio for the fiscal year for which congress appropriated initial construction funds (FY 1967) was 2.0 to 1. The benefit-to-cost ratio was based on the project functioning independently.

SUMMARIZED FINANCIAL DATA

| | | | Accumulated % of Est. Fed. Cost |
|---|---|---|---|
| Estimated Total Appropriation Requirement | $139,000,000 | | |
| Future Non-Federal Reimbursement | $-128,567,000 | | |
| Estimated Federal Cost (Initial) | | 10,433,000 | |
| Estimated Non-Federal Cost | | 128,567,000 | |
| Reimbursement: Power | 128,567,000 | | |
| Total Estimated Project Cost | | $139,000,000 | |
| Total Estimated Project Cost Ultimate Development | | $185,000,000 1/ | |
| Allocations to 30 September 1985 | | $93,450,000 | |
| Conference Allowance for FY 1986 | | $20,000,000 | |
| Allocation for FY 1986 | | $17,570,000 2/ | |
| Allocations to Date | | $111,020,000 | 80 |
| Allocation Requested for FY 1987 | | $10,800,000 | 89 |
| Scheduled Balance to Complete after FY 1987 | | $17,180,000 | |
| Unscheduled Balance to Complete after FY 1987 | | 0 | |

| STATUS: (1 January 1986) | Percent Complete | Completion Schedule |
|---|---|---|
| Long Lake Development | 100 | Dec 73 |
| Crater Lake Development | 26 | Sep 89 |
| Roads & Bridges to Long Lake | 100 | Aug 70 |
| Long Lake Weir & Intake Structure | 100 | Jul 72 |
| Power on Line: | | |
| Unit No. 1, 23, 350 kW (Long Lake) | 100 | Dec 73 |
| Unit No. 2, 23, 350 kW (Long Lake) | 100 | Dec 73 |
| Unit No. 3, 27, 000 kW (Crater Lake) | -- | Feb 89 |

1/ Includes $46,000,000 for ultimate stage-Long Lake Dam development October 1985 price level.
2/ Reflects $2,200,000 reduction assigned as savings and slippage and a transfer of $230,000 out of the project.

Division: North Pacific District: Alaska Region: Alaska

## PHYSICAL DATA

Weir (Long Lake):
Type - Concrete Gravity
Height - 18 feet
Length - 338 feet

Acres - 14,067
Type - main project area Tongass National Forest with 5 acres of Alaska State tidelands.

Reservoir Capacities:

| | |
|---|---|
| Total Storage at Long Lake, Elev 818 | 138,000 acre-feet |
| Power, Long Lake (Elev 818-704) | 138,000 acre-feet |
| Total Storage Crater Lake Elev 1,020 | 75,000 acre-feet |

Spillway (Long Lake):
Type - Ungated Overflow
Design Capacity (Maximum Pool) - 21,000 cfs

Power Installation:

| | |
|---|---|
| Ultimate: 2 units @ 23,350 kW + 1 unit @ 27,000 kW | 73,000 kW |
| Initial: 2 units @ 23,350 kW + 1 unit @ 27,000 kW | 73,000 kW |

Head: 821 feet Long Lake without Long Lake Dam, 1,023 feet Crater Lake

JUSTIFICATION: Power produced by the existing Long Lake unit of the Snettisham project (46,700 kW installed capacity) is needed to meet the needs of the Juneau area power market. The Juneau power analysis and load forecast published by Alaska Power Administration in May 1984 shows a growing power need in the Juneau area because of the use of electricity to heat homes and public buildings. As much as 90% of new construction uses electric heat. Because of the increasing cost of fuel oil most of the public buildings will be converting to electric heat. Power from the Crater Lake addition (27,000 kW installed capacity) was needed in the 1982-83 time frame to meet the growing demand. Average annual benefits, all power, are $31,757,000.

FISCAL YEAR 1987: The requested amount of $10,800,000 will be applied as follows:

| ITEM | AMOUNT |
|---|---|
| Continue Power Intake Works | $ 6,576,000 |
| Continue Turbine and Generator | 1,644,000 |
| Continue Powerhouse | 200,000 |
| Continue Switchyard Accessary | 464,000 |
| Continue Transmission Plant | 281,000 |
| Engineering & Design | 535,000 |
| Supervision & Administration | 1,100,000 |
| TOTAL | $10,800,000 |

NON-FEDERAL COSTS: Costs allocated to power are reimbursable. The capital cost allocated to power is estimated at $128,567,000 and annual operation, maintenance and replacement (OM&R) costs are estimated at $1,357,000. Information furnished by the Alaska Power Administration indicates that estimated revenues are sufficient to recover these capital costs plus interest and annual costs of OM&R within the administratively determined repayment period of 50 years.

Snettisham, Alaska

STATUS OF LOCAL COOPERATION: None required for construction.

COMPARISON OF FEDERAL COST ESTIMATE: The current Federal Cost Estimate of $139,000,000 remains the same as the last estimate ($139,000,000) submitted to Congress due to the increases cancelling out the decreases. This included increases of $589,000 in the powerplant feature due to increases in the governor, transformer, and remote supervisory and control equipment estimates, due to refinement of design. These increases were offset by decreases of $589,000 in the powerplant feature due to a reduction in the switchgear estimate due to refinement of design ($489,000) and a favorable bid in the turbine and valve contract ($100,000).

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The final environmental statement was filed with Council on Environmental Quality on 22 January 1971. The final supplemental environmental statement was filed with EPA in 24 April, 1981.

The provisions of Section 404 of the Clean Water Act do not apply, because the project improvements do not involve the placement of fill material or the discharge of dredged material into the waters of the United States.

OTHER INFORMATION: Funds were appropriated to initiate preconstruction planning in FY 1964, and construction in FY 1967.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

DIVISION: NORTH PACIFIC
DISTRICT: ALASKA

Project: Snettisham, Alaska

| Item | Estimates Presented to Congress ($1,000) | | | | |
|---|---|---|---|---|---|
| | Original Baseline | Cumulative Changes | Last | Incremental Changes | Current |
| Federal Cost<br>(Price Level) | 41,500<br>(Jul 65) | | 139,000 1/ | | 139,000 1/ |
| Reason for Change | | (97,500) | | | |
| a. Price Escalation | | 59,777 | | | |
| b. Design Changes | | 24,732 | | | |
| c. Additional Function Added Under General Authorization | | | | | |
| d. Authorized Modification | | | | | |
| e. Post Contract Award and Other Estimating Adjustments | | -245 | | | |
| f. Schedule Changes | | 981 | | | |
| g. Sundry | | 12,236 | | | |
| h. Real Estate | | 19 | | | |

1/ Includes an allowance for estimated inflation through the construction period.

REPORTS CONTROL SYMBOL:

| | |
|---|---|
| APPROPRIATION TITLE: CONSTRUCTION GENERAL | CLASSIFICATION:<br>MULTIPLE - PURPOSE POWEP |

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM | PROJECT COST ESTIMATE | TOTAL TO 30 SEP 19 85 | CURRENT FY 19 86 | BUDGET FY 19 87 | BALANCE TO COMPLETE AFTER FY 19 87 |
|---|---|---|---|---|---|---|
| | (a) | (b) | (c) | (d) | (e) | (f) |
| 1 | LANDS & DAMAGES | 27,000 | 27,000 | | | |
| 2 | DAMS | 55,101,000 | 21,727,000 | 13,620,000 | 6,576,000 | 13,178,000 |
| 3 | POWER PLANT | 51,159,000 | 43,679,000 | 2,150,000 | 2,589,000 | 2,741,000 |
| 4 | ROADS & BRIDGES | 5,447,000 | 5,447,000 | | | |
| 5 | BUILDING, GROUNDS & UTILITIES | 2,589,000 | 2,589,000 | | | |
| 6 | PERMANENT OPERATING EQUIPMENT | 587,000 | 587,000 | | | |
| 7 | ENGINEERING & DESIGN | 13,767,000 | 12,271,000 | 600,000 | 535,000 | 361,000 |
| 8 | SUPERVISION & ADMINISTRATION | 10,323,000 | 7,046,000 | 1,277,000 | 1,100,000 | 900,000 |
| 9 | | | | | | |
| 10 | TOTAL APPLIED COST | 139,000,000 | 93,373,000 | 17,647,000 | 10,800,000 | 17,180,000 |
| 11 | UNDISTRIBUTED COST - NONE | | | | | |
| 12 | TOTAL PROJECT COST | 139,000,000 | 93,373,000 | 17,647,000 | 10,800,000 | 17,180,000 |
| 13 | Pending Adjustments - NONE | | | | | |
| 14 | TOTAL COST | 139,000,000 | 93,373,000 | 17,647,000 | 10,800,000 | 17,180,000 |
| 15 | Undelivered Orders | | 61,000 | -61,000 | | |
| 16 | TOTAL OBLIGATIONS | 139,000,000 | 93,434,000 | 17,586,000 | 10,800,000 | 17,180,000 |
| 17 | Federal Funds | (139,000,000) | (93,434,000) | (17,586,000) | (10,800,000) | (17,180,000) |
| 18 | Non-Federal Contributions | | | | | |
| 19 | | | | | | |
| 20 | METHOD OF FINANCING | | | | | |
| 21 | Federal Funds | | | | | |
| 22 | Allocations | | 93,450,000 | 17,570,000 | | |
| 23 | Unobligated Carryover from Prev. Yr. | | -16,000 | 16,000 | | |
| 24 | Total Funds Avail. for Obligation | | 93,434,000 | 17,586,000 1/ | | |
| 25 | Appropriations Required | | | | 10,800,000 | 17,180,000 |
| 26 | | | | | | |
| 27 | Non-Federal Funds | | | | | |
| 28 | Contributions Required | | | | | |
| 29 | | | | | | |
| 30 | | | | | | |
| 31 | 1/ Reflects $2,200,000 reduction in Savings & Slippage and a transfer of $230,000 | | | | | |
| 32 | out of the project. | | | | | |
| 33 | | | | | | |

| | | | |
|---|---|---|---|
| EFFECTIVE DATE<br>1 JAN 86 | DIVISION<br>NORTH PACIFIC<br>DISTRICT<br>ALASKA | REGION<br>ALASKA<br>BASIN<br>AREA 2 | PROJECT<br>SNETTISHAM, ALASKA |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE.

4 FEB 1986

# BONNEVILLE SECOND POWERHOUSE, OREGON AND WASHINGTON

DIVISION: NORTH PACIFIC DISTRICT: PORTLAND, OREGON REGION: COLUMBIA NORTH PACIFIC

APPROPRIATION TITLE: Construction, General - Multiple-Purpose Power Projects

PROJECT: Bonneville Second Powerhouse, Oregon and Washington (Continuing)

LOCATION: On the Columbia River at river mile 146 and 42 miles east of Portland, Oregon

AUTHORIZATION:
1933 Federal Emergency Administration of Public Works
1935 River and Harbor Act
1937 Bonneville Project Act
WRDA of 1974
FY 1984 Second Supplemental Appropriation, PL 98-396, Title I, Chapter IV

BENEFIT TO COST RATIO: The remaining benefit-remaining cost ratio is not applicable because the project is nearing completion. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1974) was 2.3 to 1. The benefit-cost ratio was based on the projects fair share of system benefits in the Columbia River system; as the next added unit in this system the benefit-cost ratio was 2.3 to 1.

| SUMMARIZED FINANCIAL DATA | | | Accum. % of Est. Fed Cost |
|---|---|---|---|
| Estimated Total Appropriation Requirement | $663,000,000 1/ | | |
| Future Non-Federal Reimbursement | -$644,532,000 | | |
| Estimated Federal Cost | | $18,468,000 | |
| Estimated Non-Federal Cost | | 644,532,000 | |
| Reimbursement: Power | 644,532,000 | | |
| Recreation | 2/ | | |
| Total Estimated Project Cost | | $663,000,000 | |
| Allocations to 30 September 1985 | | $627,593,000 | |
| Conference Allowance for FY 1986 | | 7,300,000 | |
| Allocation for FY 1986 | | 15,100,000 4/ | |
| Allocations to Date | | 642,693,000 | 97 |
| Allocation Requested for FY 1987 | | 7,500,000 | 98 |
| Scheduled Balance to Complete after FY 1987 | | 12,807,000 | |
| Unscheduled Balance to Complete after FY 1987 | | 0 | |

| STATUS: (1 Jan 1986) | PERCENT COMPLETE | COMPLETION SCHEDULE |
|---|---|---|
| Entire Project | 97 | Apr 91 |
| Land Acquisition | 99 | Sep 86 3/ |
| Relocations | 99 | Sep 86 5/ |
| Fish and Wildlife Facilities | 86 | Apr 91 |
| Recreation Facilities | 0 | Sep 87 |
| Buildings and Grounds | 70 | Apr 87 |
| Power Plant | 99 | Apr 87 |
| Power-on-line | | |
| Unit 18 | | May 81 |
| Unit 17 | | Sep 81 |
| Unit 16 | | Jan 82 |
| Unit 15 | | Mar 82 |
| Unit 14 | | May 82 |
| Unit 13 | | Jul 82 |
| Unit 12 | | Sep 82 |
| Unit 11 | | Oct 82 |

Division: North Pacific District: Portland Region: Columbia-North Pacific
Bonneville Second Powerhouse, OR & WA

4 FEB 1986

1/ Construction of Bonneville Dam with an initial power installation of 10 units (518,400 kw capacity) was completed in 1953 at a cost of $83,239,395. The project was modified for peaking at a cost of $27,195,000 and was completed in 1978. The estimated cost shown is for the additional powerhouse project only.

2/ Non-Federal participation requirements for recreation development previously negotiated with the State of Washington are currently being negotiated with Skamania County, Washington.

3/ Land acquisition was essentially completed in June 1977 except for partial exchange of deeds for state highway, county road, railroad, town, and utilities; Mod for Peaking and Bonneville Second Powerhouse litigations are still in the courts. Access for Home Valley Park and Crates Point scheduled to be obtained in FY 1986. Acquisition of Steigerwald Lake for wildlife mitigation purposes is scheduled for FY 1986.

4/ Reflects $7,800,000 allocation to the project for Steigerwald Lake acquisition and development.

5/ Relocations are not expected to be completed until Contract 76-39 with the city of North Bonneville has been completed to the complete satisfaction of North Bonneville and the Corps. There are many unresolved issues currently under litigation including optimum town development and deannexation which impact on the completion.

## PHYSICAL DATA

Power Installation: 8 Units @ 66,500 kw; 2 fish turbine/generator units @ 13,100 kw; Total 558,200 kw; Head - 52 feet

Lands and Damages: Acres - 2,140; Project area includes the existing town site of North Bonneville as well as undeveloped and pasture lands in the surrounding area and the Steigerwald Lake area located in Clark County, about 21 miles downstream of Bonneville Dam. Improvements range from farm structures to residential and commercial structures in the town.

| | |
|---|---|
| Relocations: Wash State Hwy No. 14 - 3-3/4 miles | $ 9,826,000 |
| Burlington Northern Railroad - 3 miles | 21,734,000 |
| Town of North Bonneville and associated utilities | 26,449,000 |

JUSTIFICATION: The Pacific Northwest has experienced power curtailments in the past as development of new power generation capacity has not kept pace with power demands in spite of denial of additional Federal power for new industrial loads. The Bonneville Second Powerhouse project provides an essential part of the generation required by the Federal system during peak demand and is used to replace existing high-cost thermal generation during non-peak periods. The project has 589 Mw of dependable capacity and produces on an average annual basis 1,471,621 Mwh of energy. Total average annual benefits are estimated to be $272,874,000 of which power amounts to $272,111,000 and recreation amounts to $763,000, based on 1 October 1985 (power-values).

FISCAL YEAR 1987: The requested amount of $7,500,000 will be applied as follows:

| | Amount |
|---|---|
| Continue Fish and Wildlife Facilities | $4,457,000 |
| Continue Powerhouse construction | 874,000 |
| Complete Construction of Recreation Facilities | 207,000 |
| Complete construction of miscellaneous project features | 573,000 |
| Engineering and Design | 661,000 |
| Supervision and Administration | 728,000 |
| Total | $7,500,000 |

NON-FEDERAL COSTS: Costs allocated to power, presently estimated at $644,532,000 are reimbursable. This project is a part of the Federal Columbia River power system. Bonneville Power Administration, the Federal marketing agency, establishes system rate levels adequate to recover all capital investment cost for generating projects (including Corps generating projects) within 50-year period and to repay annual OM&R and interest expenses. BPA submits annual financial statements to Congress, as required by law, on repayment and periodically recommends rate adjustment as required for meeting repayment obligations.

STATUS OF LOCAL COOPERATION: None required for construction. Responsibility for repayment of power costs rests with the Department of Energy pursuant to Federal laws. Non-Federal participation requirements for the Home Valley park site are currently being negotiated with Skamania County, Washington and will be executed prior to initiation of construction.

COMPARISON OF FEDERAL COST ESTIMATE: The current Federal cost estimate $663,000,000 is an increase of $17,000,000 from the latest estimate ($646,000,000) submitted to Congress. This change includes increases of $817,000 for adjustments in the estimated inflation allowance through the construction period; $5,695,000 for Lands and Damages due primarily to condemnation proceedings and the addition of Steigerwald Lake investigations and acquisition; $4,026,000 for Fish Facilities due to needed work to correct Fish Guidance Efficiency and for the addition of Steigerwald Lake development; $1,293,000 for powerplant primarily due to high bids on Hydraulic Cylinder Repair and Restoration Plantings contracts, additional costs for remaining restoration work and various modifications on the control system, gantry crane and bridge crane; $4,009,000 for Engineering & Design and Supervision & Administration due to increased work for the Fish Facilities, Powerhouse Facilities and the addition of Steigerwald Lake work. Various other miscellaneous construction features increases and decreases resulted in a net increase of $1,160,000.

## STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT:

The final Environmental Impact Statement was filed with CEQ on 14 April 1972. The Environmental Impact Statement Supplement for relocation of the City of North Bonneville was filed with CEQ on 19 March 1976.

The provisions of Section 404 of the Clean Water Act have been met by a Section 404 Evaluation Report signed by the District Engineer on 4 January 1977.

## OTHER INFORMATION:

Funds to initiate preconstruction planning were appropriated in FY 1967 and for construction in FY 1974.

Funds in the amount of $8,500,000 were appropriated in FY 1984 for acquisition and initial development of the Steigerwald Lake Wetland Area, Clark County, Washington, for the fish and wildlife mitigation purposes associated with the project. Authorization also provides for transfer of the lands without monetary consideration to the Department of Interior, U.S. Fish and Wildlife Service for operation and maintenance.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: North Pacific
District: Portland

Project: Bonneville Second Powerhouse
Oregon and Washington

| | Estimates Presented to Congress ($1,000) | | | | |
|---|---|---|---|---|---|
| Item | Original Baseline | Cumulative Changes | Last | Incremental Change | Current |
| Federal Cost<br>(Price Level) | 267,000<br>(Jul 1972) | | 646,000 3/ | | 663,000 3/ 4/ |
| Reason for Change | | (379,000)3/ | | (+17,000) 4/ | |
| a. Price Escalation | | 324,790 | | +817 | |
| b. Design Changes | | 58,068 | | +5,875 5/ | |
| c. Additional Function Added Under General Authorization | | | | | |
| d. Authorized Modification | | 24,946 | | | |
| e. Post-Contract Award and Other Estimating Adjustments | | -47,034 1/ | | +2,004 6/ | |
| f. Schedule Changes | | | | | |
| g. Sundry | | 15,003 2/ | | +2,609 7/ | |
| h. Real Estate | | 3,227 | | +5,695 8/ | |

1/ Net decreases primarily due to favorable bids on turbines, seepage cut-off wall, powerhouse, generator, bridge crane, fish facilities, restoration, construction contracts, and elimination of bank stabilization work.
2/ Primarily due to transfer of fish screens, bank stabilization from Bonneville Modification for Peaking, construction noise abatement, and cultural resources preservation.
3/ Includes an allowance for estimated inflation through the construction period.
4/ Includes $817 for adjustments in the estimated inflation allowance through the construction period.
5/ Primarily due to correction of Fish Guidance Efficiency deficiencies.
6/ Primarily due to modifications and awards of power plant contracts and additional restoration work.
7/ Primarily due to addition of Steigerwald Lake development.
8/ Primarily due to real estate acquisition associated with Steigerwald Lake.

REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: MULTIPLE-PURPOSE POWER PROJECT

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM | PROJECT COST ESTIMATE | TOTAL TO 30 SEP 19 85 | CURRENT FY 19 86 | BUDGET FY 19 87 | BALANCE TO COMPLETE AFTER FY 19 87 |
|---|---|---|---|---|---|---|
|  | (a) | (b) | (c) | (d) | (e) | (f) |
| 1 | LANDS AND DAMAGES | 19,844,000 | 14,426,000 | 5,418,000 | 0 | 0 |
| 2 | RELOCATIONS | 58,009,000 | 57,888,000 | 86,000 | 35,000 | 0 |
| 3 | RESERVOIRS | 1,796,000 | 1,796,000 | 0 | 0 | 0 |
| 4 | FISH AND WILDLIFE | 99,347,000 | 82,682,000 | 3,350,000 | 4,457,000 | 8,858,000 |
| 5 | POWER PLANT | 407,111,000 | 402,121,000 | 1,846,000 | 874,000 | 2,270,000 |
| 6 | ROADS, RAILROADS AND BRIDGES | 62,000 | 0 | 0 | 62,000 | 0 |
| 7 | RECREATION FACILITIES | 227,000 | 0 | 20,000 | 207,000 | 0 |
| 8 | CULTURAL RESOURCES PRESERVATION | 2,167,000 | 1,777,000 | 0 | 230,000 | 160,000 |
| 9 | BUILDINGS, GROUNDS AND UTILITIES | 8,429,000 | 5,031,000 | 3,398,000 | 0 | 0 |
| 10 | PERMANENT OPERATING EQUIPMENT | 2,628,000 | 2,382,000 | 0 | 246,000 | 0 |
| 11 | ENGINEERING AND DESIGN | 37,555,000 | 35,663,000 | 600,000 | 661,000 | 631,000 |
| 12 | SUPERVISION AND ADMINISTRATION | 25,825,000 | 23,607,000 | 602,000 | 728,000 | 888,000 |
| 13 |  |  |  |  |  |  |
| 14 | TOTAL APPLIED COSTS (FED FUNDS ONLY) | 663,000,000 | 627,373,000 | 15,320,000 | 7,500,000 | 12,807,000 |
| 15 | UNDISTRIBUTED COSTS (NONE) |  |  |  |  |  |
| 16 | TOTAL PROJECT COSTS (FED FUNDS ONLY) | 663,000,000 | 627,373,000 | 15,320,000 | 7,500,000 | 12,807,000 |
| 17 | PENDING ADJUSTMENTS (NONE) |  |  |  |  |  |
| 18 | TOTAL COSTS (FED FUNDS ONLY) | 663,000,000 | 627,373,000 | 15,320,000 | 7,500,000 | 12,807,000 |
| 19 | UNDELIVERED ORDERS |  | 112,000 | -112,000 |  |  |
| 20 | TOTAL OBLIGATIONS |  | 627,485,000 | 15,208,000 | 7,500,000 | 12,807,000 |
| 21 |  |  |  |  |  |  |
| 22 |  |  |  |  |  |  |
| 23 | METHOD OF FINANCING |  |  |  |  |  |
| 24 | ALLOCATIONS |  | 627,593,000 | 15,100,000 1/ |  |  |
| 25 | UNOBLIGATED CARRYOVER FROM PRIOR YEAR |  |  | 108,000 |  |  |
| 26 | TOTAL FUNDS AVAILABLE FOR OBLIGATIONS |  |  | 15,208,000 |  |  |
| 27 | APPROPRIATION REQUIRED |  |  |  | 7,500,000 | 12,807,000 |
| 28 |  |  |  |  |  |  |
| 29 | 1/ Reflects $7,800,000 allocation to the project for |  |  |  |  |  |
| 30 | Staigerwald Lake acquisition and development. |  |  |  |  |  |
| 31 |  |  |  |  |  |  |
| 32 |  |  |  |  |  |  |
| 33 |  |  |  |  |  |  |

| EFFECTIVE DATE | DIVISION / DISTRICT | REGION / BASIN | PROJECT |
|---|---|---|---|
| 1 JAN 86 | NORTH PACIFIC<br>PORTLAND, OREGON | COLUMBIA-NORTH PACIFIC<br>MID-COLUMBIA | BONNEVILLE SECOND POWERHOUSE, OR & WA |

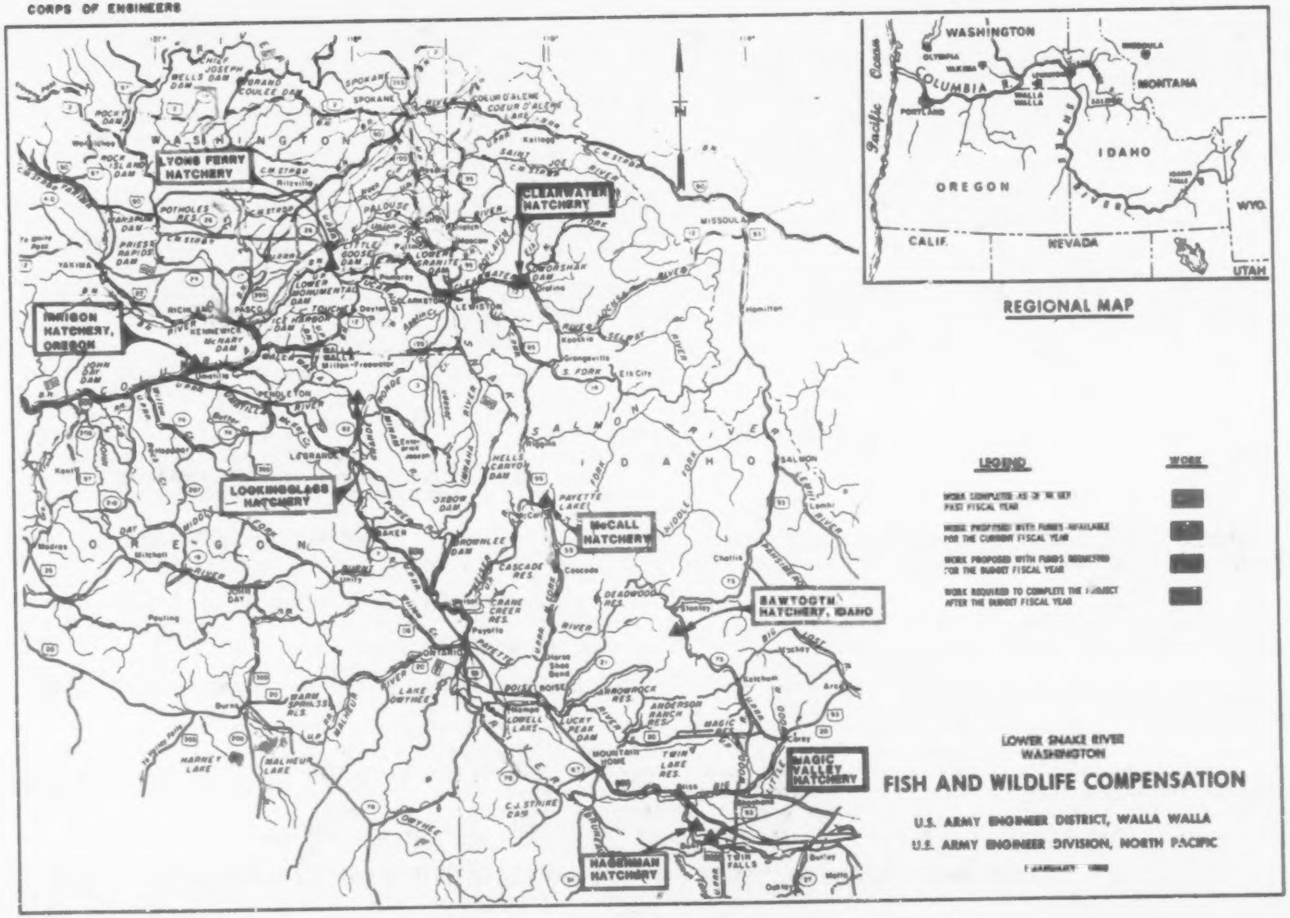
ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986

## LOWER SNAKE RIVER, WASHINGTON
## FISH AND WILDLIFE COMPENSATION

DIVISION: NORTH PACIFIC DISTRICT: WALLA WALLA REGION: COLUMBIA NORTH PACIFIC

CORPS OF ENGINEERS

U. S. ARMY


LYONS FERRY HATCHERY
CLEARWATER HATCHERY
IRRIGON HATCHERY, OREGON
LOOKINGGLASS HATCHERY
McCALL HATCHERY
SAWTOOTH HATCHERY, IDAHO
MAGIC VALLEY HATCHERY
HAGERMAN HATCHERY
WASHINGTON
OREGON
IDAHO
N
CHIEF JOSEPH DAM
WELLS DAM
GRAND COULEE DAM
ROCKY REACH DAM
ROCK ISLAND DAM
WANAPUM DAM
PRIEST RAPIDS DAM
POTHOLES RES.
LITTLE GOOSE DAM
LOWER GRANITE DAM
LOWER MONUMENTAL DAM
ICE HARBOR DAM
McNARY DAM
JOHN DAY DAM
DWORSHAK DAM
HELLS CANYON DAM
OXBOW DAM
BROWNLEE DAM
CASCADE RES.
DEADWOOD RES.
ARROWROCK RES.
ANDERSON RANCH RES.
LUCKY PEAK DAM
MAGIC RES.
C.J. STRIKE DAM
LAKE OWYHEE
WARM SPRINGS RES.
HARNEY LAKE
MALHEUR LAKE
SPOKANE
COEUR D'ALENE
MISSOULA
LEWISTON
CLARKSTON
PASCO
KENNEWICK
RICHLAND
YAKIMA
WALLA WALLA
PENDLETON
LA GRANDE
BAKER
ONTARIO
BOISE
MOUNTAIN HOME
TWIN FALLS
SALMON RIVER
SNAKE RIVER
COLUMBIA
REGIONAL MAP
WASHINGTON
MONTANA
IDAHO
OREGON
CALIF.
NEVADA
UTAH
WYO.
Pacific Ocean
COLUMBIA R.
SNAKE RIVER
PORTLAND
OLYMPIA
YAKIMA
WALLA WALLA
MISSOULA
BOISE
IDAHO FALLS

LEGEND

| | WORK |
|---|---|
| WORK COMPLETED AS OF 30 SEP PAST FISCAL YEAR | ■ |
| WORK PROPOSED WITH FUNDS AVAILABLE FOR THE CURRENT FISCAL YEAR | ■ |
| WORK PROPOSED WITH FUNDS REQUESTED FOR THE BUDGET FISCAL YEAR | ■ |
| WORK REQUIRED TO COMPLETE THE PROJECT AFTER THE BUDGET FISCAL YEAR | ■ |

LOWER SNAKE RIVER
WASHINGTON

## FISH AND WILDLIFE COMPENSATION

U.S. ARMY ENGINEER DISTRICT, WALLA WALLA
U.S. ARMY ENGINEER DIVISION, NORTH PACIFIC

1 JANUARY [illegible]

APPROPRIATION TITLE: Construction, General - Multiple Purpose Power Projects

PROJECT: Lower Snake River Fish and Wildlife Compensation, Washington, Oregon, Idaho (Continuing)

LOCATION: Hatchery sites are located at McCall, Idaho, about 1,500 feet downstream from Payette Lake; Lyons Ferry, Washington at River Mile 59 on the Snake River; Lookingglass, Oregon about 10 miles northwest of Elgin, Oregon; Hagerman, Idaho, 10 miles west of Twin Falls, Idaho; Irrigon Hatchery, about 10 miles west of Umatilla, Oregon; Dworshak Expansion, Clearwater Hatchery, about 5 miles west of Orofino, Idaho; Sawtooth Hatchery about 5 miles south of Stanley, Idaho; Magic Valley Hatchery about 4 miles north of Buhl, Idaho; and Clearwater Hatchery about 5 miles west of Orofino, Idaho. Fishing and hunting access and wildlife habitat lands will be located in Washington and Idaho.

AUTHORIZATION: Water Resource Development Act of 1976.

BENEFIT TO COST RATIO: The remaining benefit-remaining cost ratio is 7.3 to 1 at 6-7/8 percent. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1979) was 1.4 to 1. The benefit-cost ratio is based on the project functioning independently.

| SUMMARIZED FINANCIAL DATA | | | Accum. % of Est. Fed Cost |
|---|---|---|---|
| Estimated Total Appropriation Requirement | | $177,000,000 | |
| Future Non-Federal Reimbursement | $-173,015,000 | | |
| Estimated Federal Cost (Ultimate) | | 4,208,000 | |
| Estimated Non-Federal Cost | | 173,015,000 | |
| Reimbursement: Power | 172,792,000 | | |
| Cash Contribution | 223,000 | | |
| Total Estimated Project Cost | | $177,223,000 | |
| Allocations to 30 Sep 1985 | | $104,166,000 | |
| Conference Allowance for FY 1986 | | 12,000,000 | |
| Allocations for FY 1986 | | 10,800,000 1/ | |
| Allocations to Date | | 114,966,000 | 65 |
| Allocation Requested for FY 1987 | | 14,000,000 | 73 |
| Scheduled Balance to Complete after FY 1987 | | 32,380,000 | |
| Unscheduled Balance to Complete after FY 1987 | | 15,654,000 | |

| STATUS: (1 Jan 86) | PERCENT COMPLETE | COMPLETION SCHEDULE |
|---|---|---|
| Entire Project | 60 | Sep 89 |
| Lands & Damages | 25 | Indefinite |
| Wildlife Compensation Facs. | 4 | Indefinite |
| Fish Facilities | 61 | Sep 89 |
| McCall Hatchery | 100 | Dec 80 |
| Lookingglass Hatchery | 100 | Jul 82 |
| Dworshak Expansion Clearwater Hatchery | 100 | Jul 82 |
| Hagerman Steelhead Hatchery | 100 | Jun 84 |
| Lyons Ferry Hatchery | 100 | Sep 84 |
| Sawtooth Hatchery | 100 | Dec 84 |
| Irrigon Hatchery | 100 | Dec 85 |
| Magic Valley Hatchery | 0 | Sep 87 |
| Clearwater Hatchery | 0 | Sep 89 |

1/ Reflects $1,200,000 reduction assigned as savings and slippage.

Division: North Pacific District: Walla Walla Region: Columbia-North Pacific

## PHYSICAL DATA

**Capacity of Hatcheries:**

9,160,000 Fall Chinook Smolts - 101,800 lbs.
6,750,000 Spring and Summer Chinook Smolts - 450,000 lbs.
11,020,000 Summer Steelhead - 1,377,500 lbs.
93,000 lbs. of resident sport fishery

**LANDS AND DAMAGES:** Acres - approximately 1,360 acres in fee and 23,000 in easement. These lands are predominantly grazing and agricultural with several farmsteads. Acquisition of fee and easement lands under the willing seller-willing buyer concept for wildlife compensation and fisherman access has progressed very slowly to date. The Special Report to Congress on the Lower Snake River Fish and Wildlife Compensation Plan, transmitted from NPW in March 1983, detailed this problem and recommended the acquisition criteria be modified to allow fee acquisition of whole farm units. The Division Engineer notice was issued on 5 July 1983. The report was sent from the Secretary of the Army to OMB on 30 May 1985. The existing McCall Hatchery is located on a former nonoperating State of Idaho fish hatchery site on the Payette River; the Lyons Ferry Hatchery is located on an undeveloped Franklin County port area on the Snake River; Lookingglass Hatchery is located on an abandoned sawmill site on Lookingglass Creek; Hagerman Hatchery is an expansion of an existing National Fish Hatchery on Riley Creek; Magic Valley Hatchery is located on the site of an existing trout farm purchased from a private owner on the Snake River; Irrigon Hatchery is on land owned by the Corps of Engineers on the John Day Lock and Dam project on the Columbia River; Sawtooth Hatchery is on State of Idaho land on the Salmon River; Clearwater Hatchery is on private property on the Clearwater River; and Dworshak Expansion, Clearwater Hatchery, is adjacent to the Dworshak National Fish Hatchery on the Clearwater River.

**JUSTIFICATION:** The Lower Snake River Fish and Wildlife project will provide compensation for the losses to the fish and wildlife resources that were caused by the construction and operation of the four Lower Snake River dam projects (Ice Harbor, Lower Monumental, Little Goose, and Lower Granite). The project consists of a number of Chinook and Steelhead hatcheries that will provide 27,000,000 juvenile salmon and steelhead annually. These fish will be released in streams for migration to the Pacific Ocean. Adult salmon and steelhead resulting from these releases will provide both sport and commercial fishing opportunities with over 4 million pounds of fish going to the commercial fisheries and providing approximately 689,000 additional angler days of sport fishing. An estimated 132,000 adult fish will return to the project area of the Snake River. In addition to the anadromous fish, 93,000 pounds of trout or equivalent sports fish will be reared and released in Eastern Washington and Idaho streams which will provide 45,000 additional angler days of sport fishing. There will be 750 acres of streambank access land acquired for fishing. Development of the Wildlife Component of the project includes land acquisition of 23,000 acres by easement and 400 acres by fee for wildlife habitat, hunting, hunter access to project lands and the raising and release of 20,000 game birds per year by the Washington State Department of Game. Average annual benefits are as follows:

| Benefits: | Amount (1 Oct 85) |
|---|---|
| Fishery | $63,602,000 |
| Wildlife | 213,000 |
| TOTAL | $63,815,000 |

FISCAL YEAR 1987: The requested amount of $14,000,000 will be applied as follows:

| | | Amount |
|---|---|---|
| Continue fish hatchery construction | | $11,232,000 |
| Continue land acquisition | | 400,000 |
| Continue cultural resource preservation | | 25,000 |
| Engineering and design | | 1,500,000 |
| Supervision and administration | | 843,000 |
| | Total | $14,000,000 |

NON-FEDERAL COSTS: Costs allocable to power presently estimated at $173,015,000 are reimbursable. This project is a part of the Federal Columbia River Power System. Bonneville Power Administration (BPA), the Federal marketing agency, establishes system rate levels adequate to recover all capital investment costs for generating projects (including Corps generating projects) within a 50-year period and to repay annual OM&R and interest expenses. BPA submits an annual financial statement to Congress, as required by law, on repayment and periodically recommends rate adjustments as required for meeting repayment obligations.

STATUS OF LOCAL COOPERATION: None required for construction.

COMPARISON OF FEDERAL COST ESTIMATE: The current Federal cost estimate of $177,000,000 is an increase of $9,000,000 from the latest estimate ($168,000,000) submitted to Congress. This increase includes $1,022,00 primarily for deficiency corrections at six completed hatcheries; $2,686,000 based on more detailed planning of the water supply system at the Magic Valley Hatchery; $1,869,000 based on more detailed planning at the completed hatcheries; $426,000 for the State of Washington Sales Tax; $400,000 for non-sports fishing facilities; $597,000 for additional Fish Passage Development and Evaluation for the Fish and Wildlife Feature and $2,000,000 for engineering and design due to reanalysis of requirements.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The final Environmental Impact Statement was filed with the Council on Environmental Quality on 29 October 1977.

Environmental assessments are prepared and issued for coordination as hatchery sites are identified and if necessary supplemental Environmental Impact Statements would be prepared. If requirements of Section 404 are applicable either 404 (r) or exemption or the 401 State Water Quality Certificate would be obtained prior to construction.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in Fiscal Year 1978 and for construction in Fiscal Year 1979. The completion schedule for Lands and Damages and Wildlife Compensation Facilities is indefinite due to the inability to acquire land. A special report detailing these problems is under review at the Washington level..

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: North Pacific
District: Walla Walla

Project: Lower Snake River Fish and Wildlife Compensation, Washington, Oregon, Idaho

| | Estimates Presented to Congress ($1,000) | | | | |
|---|---|---|---|---|---|
| Item | Original Baseline | Cumulative Changes | Last | Incremental Change | Current |
| Federal Cost | 64,100 | | 168,000 3/ | | 177,000 3/ |
| (Price Level) | (Oct 1977) | | | | |
| Reason for Change | | (103,900) 3/ | | (+9,000) | |
| a. Price Escalation | | 66,561 | | | |
| b. Design Changes | | 44,542 1/ | | +9,066 1/ | |
| c. Additional Function Added Under General Authorization | | | | | |
| d. Authorized Modification | | | | | |
| e. Post-Contract Award and Other Estimating Adjustments | | -12,520 2/ | | -66 2/ | |
| f. Schedule Changes | | | | | |
| g. Sundry | | | | | |
| h. Real Estate | | 5,317 | | | |

1/ Increase due to design changes on the various hatcheries and related support facilities.

2/ Decrease due to receipt of favorable bids.

3/ Includes an allowance for estimated inflation through the construction period.

REPORTS CONTROL SYMBOL: RCS DAEN CWB-13

| | |
|---|---|
| APPROPRIATION TITLE: CONSTRUCTION GENERAL | CLASSIFICATION: MULTIPLE-PURPOSE POWER PROJECT |

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM<br>(a) | PROJECT COST ESTIMATE<br>(b) | TOTAL TO 30 SEP 19 85<br>(c) | CURRENT FY 19 86<br>(d) | BUDGET FY 19 87<br>(e) | BALANCE TO COMPLETE AFTER FY 19 87<br>(f) |
|---|---|---|---|---|---|---|
| 1 | LANDS AND DAMAGES | 20,829,000 | 5,030,000 | 500,000 | 400,000 | 14,899,000 |
| 2 | FISH AND WILDLIFE FACILITIES | 123,628,000 | 74,056,000 | 7,916,000 | 11,232,000 | 30,424,000 |
| 3 | CULTURAL RESOURCE PRESERVATION | 458,000 | 347,000 | 35,000 | 25,000 | 51,000 |
| 4 | ENGINEERING AND DESIGN | 22,955,000 | 17,952,000 | 2,200,000 | 1,500,000 | 1,303,000 |
| 5 | SUPERVISION AND ADMINISTRATION | 9,353,000 | 6,563,000 | 590,000 | 843,000 | 1,357,000 |
| 6 | | | | | | |
| 7 | TOTAL APPLIED COST | 177,223,000 | 103,948,000 | 11,241,000 | 14,000,000 | 48,034,000 |
| 8 | Undistributed Cost | | -16,000 | 16,000 | | |
| 9 | TOTAL PROJECT COST (FED FUNDS & NON-FED | 177,223,000 | 103,932,000 | 11,257,000 | 14,000,000 | 48,034,000 |
| 10 | CONTRIBS) | | | | | |
| 11 | Pending Adjustments | | 0 | 0 | | |
| 12 | TOTAL COST (FED FUNDS & NON-FED CONTRIBS) | 177,223,000 | 103,932,000 | 11,257,000 | 14,000,000 | 48,034,000 |
| 13 | Undelivered Orders | | 453,000 | -453,000 | | |
| 14 | TOTAL OBLIGATIONS | 177,223,000 | 104,385,000 | 10,804,000 | 14,000,000 | 48,034,000 |
| 15 | | | | | | |
| 16 | METHOD OF FINANCING | | | | | |
| 17 | FEDERAL FUNDS | | | | | |
| 18 | Allocations | 177,000,000 | 104,166,000 | 10,800,000 1/ | | |
| 19 | Unobligated Carryover from Prior Year | | | 4,000 | | |
| 20 | Total Funds Available for Obligation | | | 10,804,000 1/ | | |
| 21 | Appropriations Required | | | | 14,000,000 | 48,034,000 |
| 22 | | | | | | |
| 23 | NON-FEDERAL COSTS | | | | | |
| 24 | Cash Contributions | 223,000 | 223,000 | | | |
| 25 | Other Costs (None) | | | | | |
| 26 | | | | | | |
| 27 | | | | | | |
| 28 | 1/ Reflects $1,200,000 reduction assigned as savings and slippage | | | | | |
| 29 | | | | | | |
| 30 | | | | | | |
| 31 | | | | | | |
| 32 | | | | | | |
| 33 | | | | | | |

| | | | |
|---|---|---|---|
| EFFECTIVE DATE<br>01 JAN 86 | DIVISION NORTH PACIFIC<br>DISTRICT WALLA WALLA | REGION COLUMBIA-NORTH PACIFIC<br>BASIN LOWER SNAKE | PROJECT LOWER SNAKE RIVER FISH AND WILDLIFE COMPENSATION, WA, OR, ID |

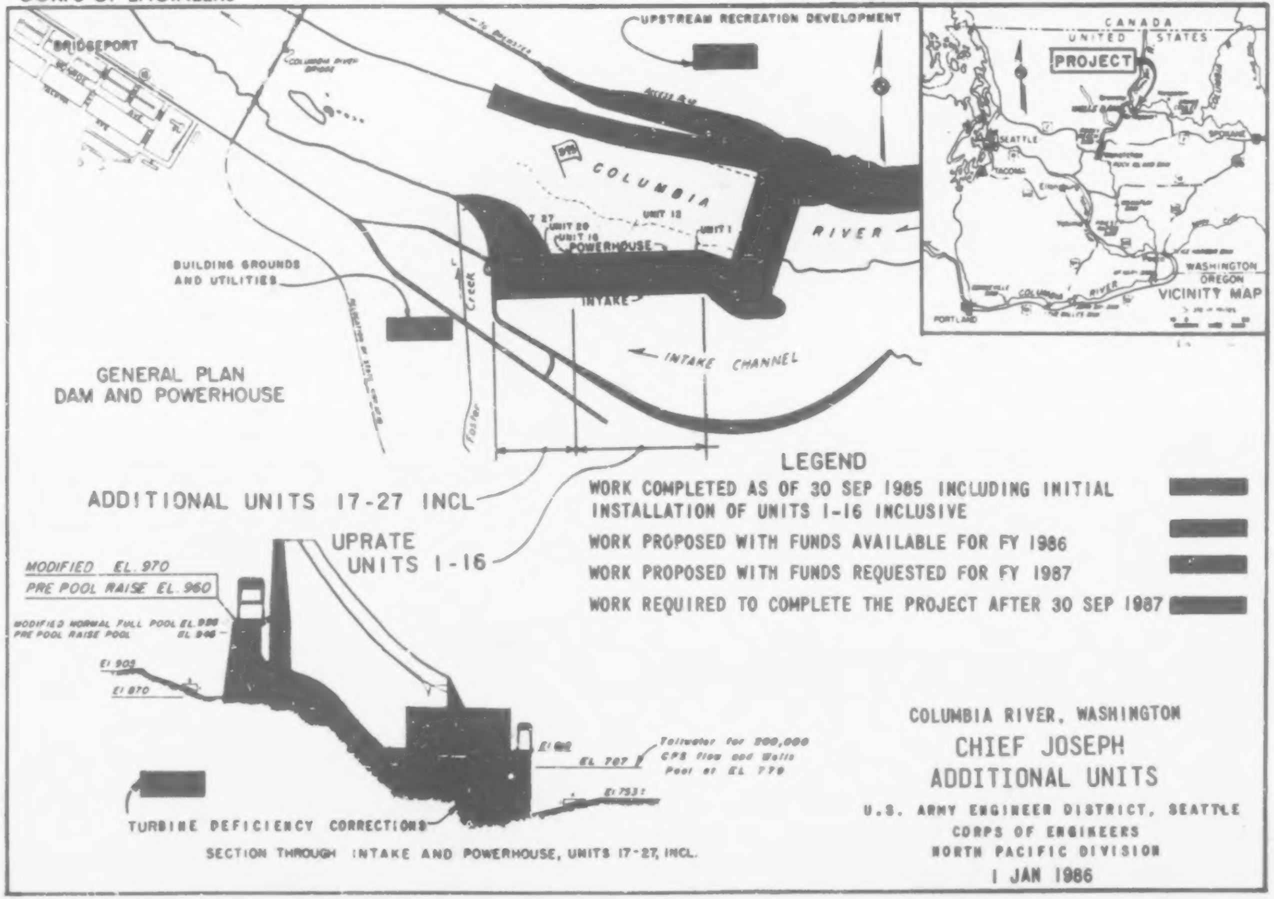
ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE.

4 FEB 1986

# CHIEF JOSEPH ADDITIONAL UNITS, WASHINGTON

DIVISION: North Pacific DISTRICT: Seattle REGION: Columbia North Pacific

CORPS OF ENGINEERS U.S. ARMY


BRIDGEPORT
COLUMBIA RIVER BRIDGE
UPSTREAM RECREATION DEVELOPMENT
COLUMBIA
RIVER
UNIT 27
UNIT 20
UNIT 16
UNIT 13
UNIT 1
POWERHOUSE
INTAKE
BUILDING GROUNDS AND UTILITIES
Foster Creek
INTAKE CHANNEL
GENERAL PLAN
DAM AND POWERHOUSE
ADDITIONAL UNITS 17-27 INCL
UPRATE UNITS 1-16
CANADA
UNITED STATES
PROJECT
SEATTLE
TACOMA
SPOKANE
PORTLAND
COLUMBIA RIVER
WASHINGTON
OREGON
VICINITY MAP
MODIFIED EL. 970
PRE POOL RAISE EL. 960
MODIFIED NORMAL FULL POOL EL. 956
PRE POOL RAISE POOL EL. 946
El 905
El 870
El 802
EL 707
El 753±
Tailwater for 200,000 CFS flow and Wells Pool at EL 779
TURBINE DEFICIENCY CORRECTIONS
SECTION THROUGH INTAKE AND POWERHOUSE, UNITS 17-27, INCL.

LEGEND

| | |
|---|---|
| WORK COMPLETED AS OF 30 SEP 1985 INCLUDING INITIAL INSTALLATION OF UNITS 1-16 INCLUSIVE | ▬ |
| WORK PROPOSED WITH FUNDS AVAILABLE FOR FY 1986 | ▬ |
| WORK PROPOSED WITH FUNDS REQUESTED FOR FY 1987 | ▬ |
| WORK REQUIRED TO COMPLETE THE PROJECT AFTER 30 SEP 1987 | ▬ |

COLUMBIA RIVER, WASHINGTON
CHIEF JOSEPH
ADDITIONAL UNITS
U.S. ARMY ENGINEER DISTRICT, SEATTLE
CORPS OF ENGINEERS
NORTH PACIFIC DIVISION
1 JAN 1986

APPROPRIATION TITLE: Construction, General-Multiple Purpose Power Projects

PROJECT: Chief Joseph Additional Units, Washington (Continuing)

LOCATION: On the Columbia River, 545 miles upstream of the mouth, 51 miles downstream of Grand Coulee Dam, 1-1/2 miles upstream from the town of Bridgeport, Washington, between Douglas and Okanogan Counties.

AUTHORIZATION: 1946 River and Harbor Act as modified by P.L. 94-587 and 95-26.

BENEFIT TO COST RATIO: The remaining benefits - remaining cost ratio is 32.4 to 1 at 3-1/4%. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY73) was 6.1 to 1. The benefit-cost ratio was based on the project's fair share of system benefits in the Columbia River system; as the next added unit in this system the benefit-cost ratio was 6.1 to 1.

| SUMMARIZED FINANACIAL DATA | | | | Accum.% of Est. Fed Cost | STATUS: 1 Jan 1986 | PERCENT COMPLETE | COMPLETION SCHEDULE |
|---|---|---|---|---|---|---|---|
| Estimated Total Appropriation Requirement | $387,000,000 | | 1/ | | | | |
| Future Non Federal Reimbursement | -377,807,000 | | | | | | |
| Estimated Federal Cost (Ultimate) | | $ 9,193,000 | | | | | |
| Estimated Non-Federal Cost | | $377,807,000 | | | | | |
| Reimbursement: | | | | | Entire Project | 91 | Sep 1987 |
| Power | 377,807,000 | | | | Pool Raise | 100 | Feb 1981 |
| Total Estimated Project Cost | | $387,000,000 | | | Power-on-line | | |
| | | | | | Units 17-27 | 100 | Jun 1977 |
| Allocations to 30 Sep 1985 | | 350,524,000 | | | | | thru |
| Conference Allowance for FY 1986 | | 13,340,000 | | | | | May 1979 |
| Allocation for FY 1986 | | 12,140,000 | 2/ | | Uprate Units 1-16 | 84 | Dec 1986 |
| Allocations to Date | | 362,664,000 | | 94 | | | |
| Allocation Requested for FY 1987 | | 6,000,000 | | 95 | Recreation | 50 | Jul 1987 |
| Scheduled Balance to Complete After FY 1987 | | -0- | | | Turbine Deficiencies | 0 | Unscheduled |
| Unscheduled Balance to Complete After FY 1987 | | 18,336,000 | | | | | |

1/ Chief Joseph Dam and powerhouse with initial power installation of 1,024,000 kW was completed in 1958 at a cost of $144,338,000. The project compromises a concrete gravity dam 220 feet high, a powerhouse with 16 units (64,000 kW each), substructure for four additional units, and an intake structure with gate bays for 27 generating units. The estimated cost of $387,000,000 for the current project includes $348,949,000 for extending the powerhouse to full length for 27 units, installation of 11 additional units (rated at 95,000 kW each) and raising the pool 10 feet; and $ 38,051,000 for uprating of the original units 1-16.

2/ Reflects $1,200,000 reduction assigned as Savings and Slippage.

Division: North Pacific District: Seattle Region: Columbia-North Pacific

## PHYSICAL DATA

### Structural Modification

Modify spillway, dam, and powerhouse strutures to accomodate a 10-foot raise in pool elevation from 946 to 956

### Relocations

Relocation of 1.4 miles of county road and relocation of recreatoin facilities at Chief Joseph Recreation Area and Elmer City

### Reservoir Capacity

Gross capacity (956 pool) - 593,100 acre-feet
Power pondage - 38,800 acre-feet

### Power Installation

| | |
|---|---|
| Additional 11 units | 1,045,000 kW |
| Uprate units 1-16 | 204,160 kW |
| Total | 1,249,160 kW |

### Lands and Damages

Total acres 12,366 (includes 9,000 acres of existing easements)

Type: New lands are predominantly used for agricultural purposes, including grazing.

JUSTIFICATION: Power is being provided at Chief Joseph Dam to help meet the growing demand for electric power in the Pacific Northwest. Installation of the 11 additional units and uprating of original units 1-16 at Chief Joseph Dam provides an essential part of the generation required by the Federal system during peak demand periods and will be used to replace existing high-cost thermal generation during nonpeak periods. Average annual benefits are as follows:

| Breakdown of Average Annual Benefits | Amount (1 October 1985) |
|---|---|
| Power | $467,524,000 |
| Recreation | 316,000 |
| Employment | 666,000 |
| | $468,506,000 |

FISCAL YEAR 1987: The requested amount of $6,000,000 will be applied as follows:

| | Amount |
|---|---|
| Continue Lands & Damages | $ 30,000 |
| Complete construction of reservoir | 70,000 |
| Continue construction of dam facilities | 775,000 |
| Continue mitigation of fish and wildlife facilities | 7,000 |
| Continue construction of powerplant facility | 1,872,000 |
| Continue construction of recreational facilities | 875,000 |
| Continue preservation of Cultural Resources | 16,000 |
| Continue construction of building and grounds facility | 1,345,000 |
| Continue procurement of permanent operations equipment | 20,000 |
| Engineering and design | 490,000 |
| Supervision and Administration | 500,000 |
| Total | 6,000,000 |

NON-FEDERAL COST: Costs allocable to power, presently estimated at $377,807,000, are reimbursable. This project will be a part of the Federal Columbia River Power System. Bonneville Power Administration (BPA), the Federal marketing agency, establishes system rate levels adequate to recover all capital investment costs for generating projects (including Corps generating projects) within a 50-year period and to repay annual OM&R and interest expenses. BPA submits annual financial statements to Congress, as required by law, on repayment status and periodically recommends rate adjustments as required for meeting repayment obligations.

STATUS OF LOCAL COOPERATION: None is required for construction.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $387,000,000 is unchanged from the last estimate ($387,000,000) submitted to Congress. However, there were increases of $2,959,000 for Powerplant, primarily for uprating Units 1-16; $1,707,000 for Reservoir, Dam, Fish and Wildlife, Recreation, Cultural Resources and Building and Grounds all due to more detailed cost estimates and contract awards and post award contract modifications; $2,262,000 for Washington State Sales Tax and $1,676,000 for Engineering and Design and Supervision and Administration due to a more detailed analysis of requirements. These increases were offset by decreases of $7,639,000 for adjustment in the estimated inflation allowance through the construction period, and $965,000 due to a reduction in project contingencies.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT:
Final Environmental Impact Statement was filed with CEQ 2 February 1972. A Supplemental Enviromental Statement was filed with CEQ on 17 July 1975.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1967 and for construction in FY 1973.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: North Pacific
District: Seattle

Project: Chief Joseph Additional Units, Washington

| Item | Estimates Presented to Congress ($1,000) | | | | |
|---|---|---|---|---|---|
| | Original Baseline | Cumulative Changes | Last | Incremental Change | Current |
| Federal Cost<br>(Price Level) | 167,000<br>(July 1971) | | 387,000 1/ | | 387,000 1/ |
| Reason for Change | | (220,000) | | (0) | |
| a. Price Escalation | | 143,876 1/ | | -7,639 1/ | |
| b. Design Changes | | 31,017 | | +1,147 | |
| c. Additional Function Added Under General Authorization | | 37,538 | | - | |
| d. Authorized Modfication | | 7,800 | | - | |
| e. Post-Contract Award and Other Estimating Adjustments | | -20,621 2/ | | +6,492 3/ | |
| f. Schedule Changes | | - | | - | |
| g. Sundry | | 6,500 4/ | | - | |
| h. Real Estate | | 13,890 | | - | |

1/ Includes an allowance for estimated inflation through construction period.
2/ Includes $17,470 for correction of turbine deficiencies, for which the Federal Government is seeking reimbursement from the contrator.
3/ Includes $2,262 for Washington State Sales and Use Tax.
4/ Colville Confederated Tribe Settlement.

REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: Multiple Purpose Projects

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 1986 AND 1987

| LINE NO | ITEM | PROJECT COST ESTIMATE | TOTAL TO 30 SEP 19 85 | CURRENT FY 19 86 | BUDGET FY 19 87 | BALANCE TO COMPLETE AFTER FY 19 87 |
|---|---|---|---|---|---|---|
| | (a) | (b) | (c) | (d) | (e) | (f) |
| 1 | LANDS AND DAMAGES | 20,950,000 | 20,858,000 | 30,000 | 30,000 | 32,000 |
| 2 | RELOCATIONS | 2,036,000 | 2,036,000 | | | |
| 3 | RESERVOIR | 1,137,000 | 1,029,000 | 38,000 | 70,000 | |
| 4 | DAM | 125,070,000 | 123,600,000 | 400,000 | 775,000 | 295,000 |
| 5 | FISH AND WILDLIFE FACILITIES | 4,100,000 | 3,894,000 | 146,000 | 7,000 | 53,000 |
| 6 | POWER PLANT | 176,782,000 | 149,854,000 | 8,771,000 | 1,872,000 | 16,285,000 |
| 7 | ROADS | 1,420,000 | 1,420,000 | | | |
| 8 | RECREATION FACILITIES | 3,000,000 | 934,000 | 947,000 | 875,000 | 244,000 |
| 9 | CULTURAL RESOURCES PRESERVATION | 4,050,000 | 3,970,000 | 64,000 | 16,000 | |
| 10 | BUILDINGS, GROUNDS, AND UTILITIES | 7,400,000 | 5,454,000 | 253,000 | 1,345,000 | 348,000 |
| 11 | PERMANENT OPERATING EQUIPMENT | 665,000 | 556,000 | 20,000 | 20,000 | 69,000 |
| 12 | ENGINEERING AND DESIGN | 22,700,000 | 21,104,000 | 840,000 | 490,000 | 266,000 |
| 13 | SUPERVISION AND ADMINISTRATION | 17,690,000 | 15,766,000 | 680,000 | 500,000 | 744,000 |
| 14 | | | | | | |
| 15 | | | | | | |
| 16 | TOTAL APPLIED COST | 387,000,000 | 350,475,000 | 12,189,000 | 6,000,000 | 18,336,000 |
| 17 | Undistributed Cost | | | | | |
| 18 | TOTAL PROJECT COSTS | 387,000,000 | 350,475,000 | 12,189,000 | 6,000,000 | 18,336,000 |
| 19 | Pending Adjustments | | | | | |
| 20 | TOTAL COSTS | 387,000,000 | 350,475,000 | 12,189,000 | 6,000,000 | 18,336,000 |
| 21 | Undelivered Orders | | 49,000 | -49,000 | | |
| 22 | TOTAL OBLIGATIONS | 387,000,000 | 350,524,000 | 12,140,000 | 6,000,000 | 18,336,000 |
| 23 | | | | | | |
| 24 | | | | | | |
| 25 | METHOD OF FINANCING | | | | | |
| 26 | Allocations | | 350,524,000 | 12,140,000 | | |
| 27 | Unobligated Carryover from Prior Year | | 0 | 0 | | |
| 28 | Total Funds Available for Obligation | | 350,524,000 | 12,140,000 | | |
| 29 | Appropriations Required | | | | 6,000,000 | 18,336,000 |
| 30 | | | | | | |
| 31 | | | | | | |
| 32 | | | | | | |
| 33 | | | | | | |

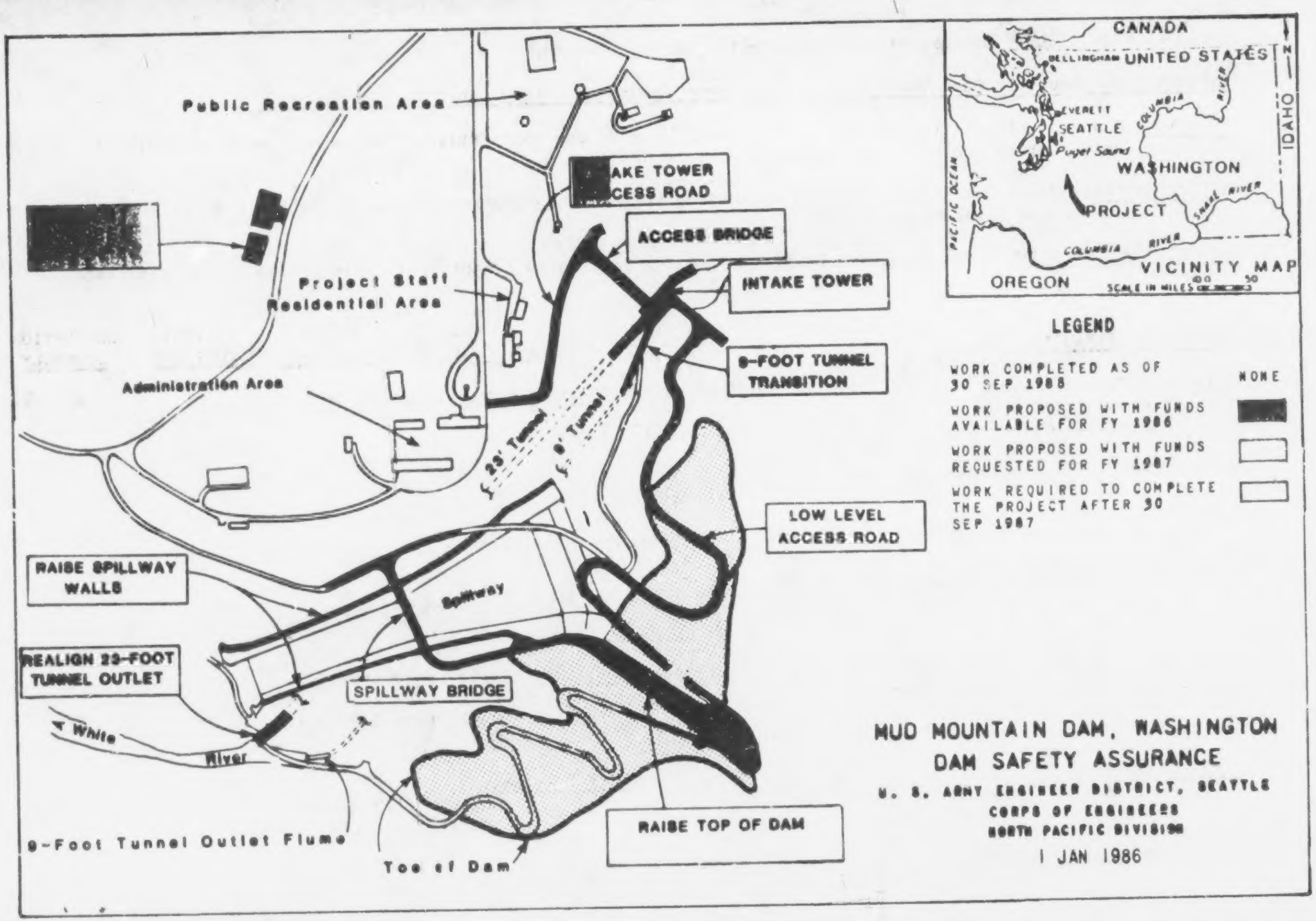
| | | | |
|---|---|---|---|
| EFFECTIVE DATE<br>1 Jan 86 | DIVISION NORTH PACIFIC<br>DISTRICT SEATTLE | REGION COLUMBIA NORTH PACIFIC<br>BASIN UPPER COLUMBIA | PROJECT<br>CHIEF JOSEPH ADDITIONAL UNITS, WA |

ENG FORM 1 SEP 76 2208 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE.

4 FEB 1986

# MUD MOUNTAIN DAM, WASHINGTON
## DAM SAFETY ASSURANCE

DIVISION: NORTH PACIFIC DISTRICT: SEATTLE REGION: COLUMBIA-NORTH PACIFIC


Public Recreation Area
INTAKE TOWER ACCESS ROAD
ACCESS BRIDGE
Project Staff Residential Area
INTAKE TOWER
9-FOOT TUNNEL TRANSITION
Administration Area
23' Tunnel
9' Tunnel
LOW LEVEL ACCESS ROAD
RAISE SPILLWAY WALLS
Spillway
REALIGN 23-FOOT TUNNEL OUTLET
SPILLWAY BRIDGE
White River
9-Foot Tunnel Outlet Flume
Toe of Dam
RAISE TOP OF DAM
CANADA
BELLINGHAM
UNITED STATES
N
EVERETT
SEATTLE
Puget Sound
COLUMBIA RIVER
IDAHO
WASHINGTON
PACIFIC OCEAN
PROJECT
SNAKE RIVER
COLUMBIA RIVER
OREGON
VICINITY MAP
SCALE IN MILES 100 50
LEGEND
WORK COMPLETED AS OF 30 SEP 1985 — NONE
WORK PROPOSED WITH FUNDS AVAILABLE FOR FY 1986 — ■
WORK PROPOSED WITH FUNDS REQUESTED FOR FY 1987 — ☐
WORK REQUIRED TO COMPLETE THE PROJECT AFTER 30 SEP 1987 — ☐

MUD MOUNTAIN DAM, WASHINGTON
DAM SAFETY ASSURANCE
U. S. ARMY ENGINEER DISTRICT, SEATTLE
CORPS OF ENGINEERS
NORTH PACIFIC DIVISION
1 JAN 1986

APPROPRIATION TITLE: Construction, General - Dam Safety Assurance

PROJECT: Mud Mountain Dam, Washington - Dam Safety Assurance (Flood Control) (Continuing)

LOCATION: Mud Mountain Dam is located at river mile 29.6 on the White River, 5 miles upstream and southeast of Enumclaw, and 24 miles southeast of Tacoma in western Washington.

AUTHORIZATION: Flood Control Act of 1936 authorized the Mud Mountain reservoir, on the White River as the main unit of the Puyallup River flood control project.

BENEFIT TO COST RATIO: The remaining benefit-remaining cost ratio is not applicable to dam safety assurance projects.

| SUMMARIZED FINANCIAL DATA | | Accum. % of Est. Fed. Cost | STATUS 1 Jan 1986 | PERCENT COMPLETE | COMPLETION SCHEDULE |
|---|---|---|---|---|---|
| Estimated Federal Cost | $23,800,000 1/ | | Entire Project | 0 | Sep 88 |
| Estimated Non-Federal Cost | 0 | | | | |
| Total Estimated Project Cost | $23,800,000 | | | | |
| Allocations to 30 September 1985 | 0 | | | | |
| Allocation for FY 1986 | 1,300,000 | | | | |
| Allocation to Date | 1,300,000 | 5 | | | |
| Allocation Requested for FY 1987 | 4,000,000 | 22 | | | |
| Scheduled Balance to Complete after FY 1987 | 18,500,000 | | | | |
| Unscheduled Balance to Complete after FY 1987 | 0 | | | | |

PHYSICAL DATA

Dam: Type: Rockfill with earth core
Height: 425 feet above bedrock
Crest: 700 feet long
Width: 1,600 feet at base, 50 feet at crest

Spillway: Type: uncontrolled
Design Capacity: 139,000 cfs
Overtopping Capacity: 220,000 cfs

9 Ft. Tunnel:
Length: 1,800 feet
Capacity: 5,180 cfs

23 Ft. Tunnel:
Length: 1,900 feet
Capacity: 12,600 cfs

1/ See "OTHER INFORMATION"

Division: North Pacific District: Seattle Region: Columbia-North Pacific

4 FEB 1986

PROPOSED MODIFICATIONS: The proposed modifications will consist of raising the dam crest elevation; raising the spillway chute walls to contain the spillway discharge during the spillway design flood (SDF) event; constructing a new intake tower which will be accessible at all pool levels, will serve both tunnels, will withstand the maximum credible earthquake, and will remain open during and after high flows; and constructing a new bridge over the spillway for access to downstream outlets during spillway use.

JUSTIFICATION: Mud Mountain Dam became operational in 1948, and presently provides flood damage reduction protection for about 850 acres of land on the White River and approximately 6,200 acres on the Puyallup River. The area is used for agriculture, residential, industrial, commercial, and transportation developments related to the intensely developing Port of Tacoma area. Major transportation facilties include the Burlington Northern and the Tacoma Beltline Railroads; Interstate Highway 5; and U.S. Highway 99 and 410. The area has a population of more than 190,000 people with 73,000 in the Mud Mountain Dam flood plain.

The existing spillway is inadequate for a SDF based on current criteria. With an SDF the dam would be overtopped and would probably fail. The resulting flood would inundate the White and Puyallup Rivers and could cause flow into the adjacent Green River Valley below Auburn. Extensive and widespread flooding would result in catastrophic damages with a potential for high loss of human life. Damages without dam failure have been estimated to be about $1.9 billion at October 1985, prices and conditions. Damages associated with a dam failure during the SDF conditions have been estimated to be about $3.2 billion. Should the dam fail, costs to repair the dam structure are estimated to be $117 million and yearly flood losses would occur until the dam is replaced.

There would also be a high probability for loss of reservoir control by failure of the intake towers during the Maximum Credible Earthquake or plugging of the towers with debris during floods. Loss of control would cause a rapid and uncontrolled rise in pool level resulting in unregulated flow over the spillway and loss of flood protection. Under these conditions, the integrity of the core of the dam and the right reservoir rim would be jeopardized by seepage resulting from the prolonged high pool.

FISCAL YEAR 1987: The requested amount of $4,000,000 will be applied as follows:

| | Amount |
|---|---|
| Continue modification of dam | $2,840,000 |
| Engineering and design | 390,000 |
| Supervision and administration | 770,000 |
| Total | $4,000,000 |

NON-FEDERAL COSTS: None required.

STATUS OF LOCAL COOPERATION: None required.

COMPARISON OF FEDERAL COST ESTIMATE: The current Federal cost estimate of $23,800,000 is unchanged from the initial estimate to Congress, and includes $2,100,000 for an estimated inflation allowance from 1 October 1985 through the construction period.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The provisions of Section 404 of the Clean Water Act will be met as follows:

An environmental assessment was completed in the second quarter of FY86. The provisions of Section 404 of the Clean Water Act were met by release of the preliminary Section 404(b)(1) Evaluation and Public Notice issued in the second quarter FY86, a certification from the State of Washington and final 404(b)(1) report in the second quarter FY86, and the District Engineer's signature on the General Design Memorandum in the second quarter FY86.

OTHER INFORMATION:
The General Design Memorandum was funded under the Operation and Maintenance, General appropriation.
Funds to initiate construction were appropriated in FY86.

A seepage problem was discovered in the dam core during geotechnical exploration in FY 1985. Studies are being continued during FY 1986 to examine the problem and its severity, and to develop a solution. If necessary, the estimated Federal cost will be revised to reflect the proposed solution.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

**Division:** North Pacific
**District:** Seattle

**Project:** Mud Mountain Dam, WA (Dam Safety Assurance)

| Item | Estimates Presented to Congress $1,000) | | | | |
|---|---|---|---|---|---|
| | Original Baseline | Cumulative Changes | Last | Incremental Change | Current |
| Federal Cost<br>(Price Level) | 23,800 1/ 2/<br>(Inflated) | | 23,800 1/ 2/<br>(Inflated) | | 23,800 1/2/<br>(Inflated) |
| Reason for Change | | N/A | | 0 | |
| a. Price Escalation | | | | | |
| b. Design Changes | | | | | |
| c. Additional Function Added Under General Authorization | | | | | |
| d. Authorized Modification | | | | | |
| e. Post-Contract Award and Other Estimating Adjustments | | | | | |
| f. Schedule Changes | | | | | |
| h. Real Estate | | | | | |

1/ Initial estimate presented to Congress for FY 1986 budget.

2/ Includes $2,100,000 allowance for estimated inflation from 1 October 1985 through the construction period.

REPORTS CONTROL SYMBOL: DAEN-CWB-13

**APPROPRIATION TITLE:** CONSTRUCTION GENERAL

**CLASSIFICATION:** DAM SAFETY ASSURANCE

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO. | ITEM | PROJECT COST ESTIMATE | TOTAL TO 30 SEP 19 85 | CURRENT FY 19 86 | BUDGET FY 19 87 | BALANCE TO COMPLETE AFTER FY 19 87 |
|---|---|---|---|---|---|---|
| | (a) | (b) | (c) | (d) | (e) | (f) |
| 1 | DAM | 20,600,000 | 0 | 300,000 | 2,840,000 | 17,460,000 |
| 2 | ENGINEERING AND DESIGN | 1,340,000 | 0 | 850,000 | 390,000 | 100,000 |
| 3 | SUPERVISION AND ADMINISTRATION | 1,860,000 | 0 | 150,000 | 770,000 | 940,000 |
| 4 | | | | | | |
| 5 | TOTAL APPLIED COST (Fed Funds Only) | 23,800,000 | 0 | 1,300,000 | 4,000,000 | 18,500,000 |
| 6 | Undistributed Cost - None | | | | | |
| 7 | TOTAL PROJECT COSTS (Fed Funds Only) | 23,800,000 | 0 | 1,300,000 | 4,000,000 | 18,500,000 |
| 8 | Pending Adjustments | | | | | |
| 9 | TOTAL COSTS (Fed Funds Only) | 23,800,000 | 0 | 1,300,000 | 4,000,000 | 18,500,000 |
| 10 | Undelivered Orders | | | | | |
| 11 | TOTAL OBLIGATIONS | 23,800,000 | 0 | 1,300,00 | 4,000,000 | 18,500,000 |
| 12 | | | | | | |
| 13 | | | | | | |
| 14 | METHOD OF FINANCING | | | | | |
| 15 | Allocations | | 0 | 1,300,000 | | |
| 16 | Unobligated Carryover from Prior Year | | | 0 | | |
| 17 | Total Funds Available | | | 1,300,000 | | |
| 18 | Appropriations Required | | | | 4,000,000 | 18,500,000 |
| 19 | | | | | | |
| 20 | | | | | | |
| 21 | | | | | | |
| 22 | | | | | | |
| 23 | | | | | | |
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| 32 | | | | | | |
| 33 | | | | | | |

| | | | |
|---|---|---|---|
| EFFECTIVE DATE<br>1 Jan 86 | DIVISION NORTH PACIFIC<br>DISTRICT SEATTLE | REGION COLUMBIA NORTH PACIFIC<br>BASIN WHITE RIVER | PROJECT<br>MUD MOUNTAIN DAM, WASHINGTON |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE.

4 FEB 1986

## NORTH PACIFIC DIVISION
## JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

1. NAVIGATION.

a. Channels and Harbors. The program request of $38,557,000 provides for essential maintenance work on 34 channel and harbor projects named in the list which follows. The work to be accomplished under this activity consists of maintaining the navigation channels and basins of coastal harbors by means of dredging, removal of navigation obstructions, and repair of navigation structures, as authorized in the laws adopting river and harbor projects.

OBLIGATIONS

| PROJECT | ACTUAL FY 1985 | ESTIMATED FY 1986 | ESTIMATED FY 1987 | EXPLANATION OF MAJOR CHANGES |
|---|---|---|---|---|
| ALASKA | | | | |
| Anchorage Harbor | $ 1,229,400 | $ 1,181,300 | $ 1,920,000 | Variation in dredging requirements. |
| Dillingham Harbor | 426,200 | 406,200 | 423,000 | Variation in dredging requirements. |
| Homer Harbor | 49,700 | 265,400 | 306,000 | Variation in dredging requirements. |
| Ninilchik Harbor | 155,800 | 230,200 | 243,000 | Variation in dredging requirements. |
| Nome Harbor | 555,500 | 563,500 | 1,029,000 | Dredging FY 85, FY 86 and FY 87. Engineering and design for jetty repairs FY 87. |
| Stikine River | 20,500 | 1,800 | 13,000 | Variation in snagging requirements. |
| OREGON | | | | |
| Chetco River | 474,200 | 603,300 | 502,000 | Variation in dredging requirements. |
| Columbia and Lower Willamette Rivers below Vancouver, WA and Portland, OR | 15,212,600 | 11,223,500 | 10,351,000 | Variation in dredging requirements. |
| Columbia River between Vancouver, WA and The Dalles, OR | 662,200 | 529,800 | 321,000 | Variation in dredging requirements. |
| Columbia River at the Mouth | 7,249,600 | 7,560,700 | 7,816,000 | Variation in dredging requirements. |
| Coos and Millicoma Rivers | 44,200 | 140,900 | 131,000 | Variation in dredging requirements. |
| Coos Bay | 4,987,700 | 3,121,300 | 2,351,000 | Variation in dredging requirements. |
| Coquille River | 420,800 | 447,900 | 279,000 | Variation in dredging requirements. |

NORTH PACIFIC DIVISION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

1. NAVIGATION. (Continued)
   a. Channels and Harbors. (Continued)

OBLIGATIONS

| PROJECT | ACTUAL FY 1985 | ESTIMATED FY 1986 | ESTIMATED FY 1987 | EXPLANATION OF MAJOR CHANGES |
|---|---|---|---|---|
| OREGON (Continued) | | | | |
| Port Orford | $ 391,400 | $ 218,800 | $ 359,000 | Variation in dredging requirements. |
| Rogue River Harbor at Gold Beach | 1,001,200 | 490,900 | 429,000 | Variation in dredging requirements. |
| Siuslaw River | 645,700 | 536,600 | 399,000 | Variation in dredging requirements. |
| Skipanon Channel | 334,900 | 333,100 | 229,000 | Variation in dredging requirements. |
| Umpqua River | 593,400 | 875,800 | 826,000 | Variation in dredging requirements. |
| Yaquina Bay and Harbor | 1,097,000 | 827,700 | 1,326,000 | Variation in dredging requirements. |
| WASHINGTON | | | | |
| Anacortes Harbor | 0 | 230,000 | 103,000 | Study of unconfined open water disposal of dredged material in Puget Sound FY 86 and FY 87. |
| Bellingham Harbor | 11,800 | 3,200 | 411,000 | Project surveillance FY 85 and FY 86. Periodic dredging and study of confined open water disposal of dredged material in Puget Sound FY 87. |
| Columbia River at Baker Bay | 312,200 | 325,100 | 666,000 | Variation in dredging requirements. |
| Columbia River Between Chinook and Sand Island | 321,500 | 457,300 | 444,000 | Variation in dredging requirements. |
| Everett Harbor and Snohomish River | 154,000 | 654,800 | 607,000 | Project surveillance FY 85. Dredging FY 86 and FY 87. Study of unconfined open water disposal of dredged material in Puget Sound FY 85, FY 86 and FY 87. |

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

1. NAVIGATION. (Continued)
   a. Channels and Harbors. (Continued)

OBLIGATIONS

| PROJECT | ACTUAL FY 1985 | ESTIMATED FY 1986 | ESTIMATED FY 1987 | EXPLANATION OF MAJOR CHANGES |
|---|---|---|---|---|
| WASHINGTON (Continued) | | | | |
| Grays Harbor and Chehalis River | $ 4,254,400 | $ 4,720,900 | $ 4,537,000 | Variation in dredging requirements. |
| Lake Crockett | 0 | 0 | 299,000 | Periodic dredging FY 87. |
| Olympia Harbor | 0 | 100,000 | 114,000 | Study of unconfined open water disposal of dredged material in Puget Sound FY 86 and FY 87. |
| Port Townsend | 0 | 0 | 52,000 | Study of unconfined open water disposal of dredged material in Puget Sound FY 87. |
| Puget Sound and Its Tributary Waters | 557,500 | 719,200 | 627,000 | Variation in debris collection. |
| Quillayute River | 528,800 | 8,100 | 694,000 | Dredging FY 85 and FY 87. Project surveillance FY 86. |
| Seattle Harbor | 271,500 | 903,500 | 466,000 | Variation in dredging requirements. Study of unconfined open water disposal of dredged material in Puget Sound FY 85, FY 86 and FY 87. |
| Swinomish Channel | 19,600 | 423,400 | 206,000 | Project surveillance FY 85. Dredging FY 86. Study of unconfined open water disposal of dredged materials in Puget Sound FY 86 and FY 87. |
| Tacoma Harbor | 0 | 50,000 | 26,000 | Study of unconfined open water disposal of dredged material in Puget Sound FY 86 and FY 87. |
| Waterway Connecting Port Townsend and Oak Bay | 16,200 | 600 | 52,000 | Study of unconfined open water disposal of dredged material in Puget Sound FY 87. |

NORTH PACIFIC DIVISION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

1. NAVIGATION. (Continued)
   a. Channels and Harbors. (Continued)

OBLIGATIONS

| PROJECT | ACTUAL FY 1985 | ESTIMATED FY 1986 | ESTIMATED FY 1987 | EXPLANATION OF MAJOR CHANGES |
|---|---|---|---|---|
| Other Projects Maintained Periodically | $ 1,802,400 | $ 435,900 | $ | |
| TOTAL - CHANNELS AND HARBORS | $43,801,900 | $38,590,700 | $38,557,000 | |

b. Locks and Dams. The program request of $3,790,000 provides the amount for operational requirements of two projects. Annual requirements are for operation and ordinary maintenance of project facilities; labor, supplies, materials and parts required for the day-to-day functioning of projects; and periodic maintenance, repairs, replacement and modernization.

| PROJECT | ACTUAL FY 1985 | ESTIMATED FY 1986 | ESTIMATED FY 1987 | EXPLANATION OF MAJOR CHANGES |
|---|---|---|---|---|
| OREGON | | | | |
| Willamette River at Willamette Falls | $ 477,100 | $ 512,000 | $ 512,000 | |
| WASHINGTON | | | | |
| Lake Washington Ship Canal | 3,597,100 | 3,272,100 | 3,278,000 | Replace permanent operating equipment and repair stilling basin FY 85. |
| TOTAL - LOCKS AND DAMS | $ 4,074,200 | $ 3,784,100 | $ 3,790,000 | |
| TOTAL - NAVIGATION | $47,876,100 | $42,374,800 | $42,347,000 | |

NORTH PACIFIC DIVISION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

## 2. FLOOD CONTROL.

a. Reservoirs. The program request of $10,468,000 for the operation and maintenance of 13 flood control reservoirs, including essential repair work and scheduling of flood control reservoir operations within the Division, provides the amount for operational requirements. Annual requirements are for operation and ordinary maintenance of project facilities; labor, supplies, material and parts required for day-by-day functioning of projects; periodic maintenance, repairs, and replacements; and contract law enforcement. The requested amount also includes application of special recreation use fees for recreation areas.

OBLIGATIONS

| PROJECT | ACTUAL FY 1985 | ESTIMATED FY 1986 | ESTIMATED FY 1987 | EXPLANATION OF MAJOR CHANGES |
|---|---|---|---|---|
| ALASKA | | | | |
| Chena River Lakes | $ 942,500 | $1,018,600 | $ 797,000 | Increased maintenance during the first years fully operational, FY 85 and FY 86. |
| IDAHO | | | | |
| Lucky Peak Lake | 1,210,800 | 632,000 | 918,000 | Repair floor of outlet works and dam safety assurance FY 85. Repair and realign outlet gate guides FY 87. |
| OREGON | | | | |
| Applegate Lake | 591,200 | 622,400 | 679,000 | Upgrade intake tower elevator FY 87. |
| Blue River Lake | 153,000 | 155,300 | 616,000 | Seismic reevaluation study FY 87. |
| Cottage Grove Lake | 619,100 | 746,100 | 937,000 | Debris removal improvements FY 86. Remote control of regulating outlet FY 87. |

NORTH PACIFIC DIVISION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

2. FLOOD CONTROL. (Continued)
   a. Reservoirs. (Continued)

OBLIGATIONS

| PROJECT | ACTUAL FY 1985 | ESTIMATED FY 1986 | ESTIMATED FY 1987 | EXPLANATION OF MAJOR CHANGES |
|---|---|---|---|---|
| OREGON (Continued) | | | | |
| Dorena Lake | $ 350,800 | $ 328,800 | $ 618,000 | Remote control of regulating outlet and debris removal improvements FY 87. |
| Fall Creek Lake | 232,900 | 261,600 | 387,000 | Install flood warning system FY 87. |
| Fern Ridge Dam and Lake | 739,500 | 891,000 | 1,271,000 | Repair spillway gates FY 86 and FY 87. Bank stabilization FY 87. |
| Willow Creek Lake | 486,700 | 313,200 | 341,000 | Increased maintenance for the first year fully operational, FY 85. |
| WASHINGTON | | | | |
| Howard A. Hanson Reservoir | 691,000 | 680,600 | 734,000 | Install Piezometer FY 87. |
| Mill Creek Lake | 303,400 | 415,200 | 340,000 | Increased O&M of recently reopened public use facilities FY 86. |
| Mud Mountain Dam | 2,902,400 | 1,619,500 | 1,081,000 | Engineering and design for dam safety modifications FY 85. Replace equipment, improve access to intake works, and repair intake tunnel FY 86. |

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

2. FLOOD CONTROL. (Continued)
a. Reservoirs. (Continued)

OBLIGATIONS

| PROJECT | ACTUAL FY 1985 | ESTIMATED FY 1986 | ESTIMATED FY 1987 | EXPLANATION OF MAJOR CHANGES |
|---|---|---|---|---|
| WASHINGTON (Continued) | | | | |
| Wynoochee Lake | $1,044,400 | $1,011,300 | $1,405,000 | Install Piezometer, paint and repair sluice gates FY 87. |
| Scheduling Reservoir Operations | 348,600 | 439,300 | 344,000 | Increased work on reservoir regulation manuals FY 86. |
| TOTAL - RESERVOIRS | $10,616,300 | $9,134,900 | $10,468,000 | |

b. Channel Improvements, Inspection and Miscellaneous Maintenance. The program request of $819,000 provides for the essential annual and periodic maintenance requirements of three flood control protection projects, inspection of completed works, and inspection of non-Federal levees within the Division during the budget year.

| PROJECT | ACTUAL FY 1985 | ESTIMATED FY 1986 | ESTIMATED FY 1987 | EXPLANATION OF MAJOR CHANGES |
|---|---|---|---|---|
| OREGON | | | | |
| Willamette River Bank Protection | $ 179,100 | $ 176,500 | $ 70,000 | Increased bank revetment repairs FY 85 and FY 86. |

NORTH PACIFIC DIVISION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

2. FLOOD CONTROL. (Continued)

b. Channel Improvements, Inspection and Miscellaneous Maintenance. (Continued)

OBLIGATIONS

| PROJECT | ACTUAL FY 1985 | ESTIMATED FY 1986 | ESTIMATED FY 1987 | EXPLANATION OF MAJOR CHANGES |
|---|---|---|---|---|
| WASHINGTON | | | | |
| Stillaguamish River | $ 99,700 | $ 110,400 | $ 100,000 | Increased inspections and repairs FY 86. |
| Tacoma, Puyallup River | 48,900 | 41,300 | 35,000 | Increased inspections and repairs FY 85 and FY 86. |
| Inspection of Completed Works | 246,300 | 435,500 | 376,000 | Ririe Lake analysis FY 85, FY 86 and FY 87. |
| Inspection of Completed PL99 Works | 161,600 | 169,600 | 238,000 | Increased inspections FY 87. |
| TOTAL - CHANNEL IMPROVEMENTS, INSPECTIONS AND MISCELLANEOUS | $ 735,600 | $ 933,300 | $ 819,000 | |
| TOTAL - FLOOD CONTROL | $11,351,900 | $10,068,200 | $11,287,000 | |

3. MULTIPLE PURPOSE POWER PROJECTS. The program request of $94,525,000 for the operation and maintenance of 18 multiple purpose projects provides the amount for operational requirements. Annual requirements are for operation and ordinary maintenance of project facilities; labor, supplies, materials and parts required for the day-by-day functioning of the projects; and periodic maintenance, repairs and replacements. The requested amount also includes application of special recreation use fees for recreation areas.

NORTH PACIFIC DIVISION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

3. MULTIPLE PURPOSE POWER PROJECTS. (Continued)

OBLIGATIONS

| PROJECT | ACTUAL FY 1985 | ESTIMATED FY 1986 | ESTIMATED FY 1987 | EXPLANATION OF MAJOR CHANGES |
|---|---|---|---|---|
| IDAHO | | | | |
| Albeni Falls Dam | $ 2,515,300 | $ 2,402,100 | $ 2,026,000 | Boundary monumentation FY 85 and FY 87. Bank stabilization FY 85 and FY 86. Repair powerhouse roof, maintenance building and debris boom maintenance FY 86. |
| Dworshak Dam and Reservoir | 5,436,400 | 5,483,400 | 7,005,000 | Install powerplant control system FY 87. |
| MONTANA | | | | |
| Libby Dam, Lake Koocanusa | 2,803,300 | 3,455,900 | 3,856,000 | Repair maintenance buildings and sluice FY 86. Replace left abutment instruments, install fire protection FY 86 and FY 87. |
| OREGON | | | | |
| Bonneville Lock and Dam | 10,628,200 | 12,143,000 | 13,128,000 | Major powerhouse modernization FY 85, FY 86 and FY 87. |

NORTH PACIFIC DIVISION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

3. MULTIPLE PURPOSE POWER PROJECTS. (Continued)

OBLIGATIONS

| PROJECT | ACTUAL FY 1985 | ESTIMATED FY 1986 | ESTIMATED FY 1987 | EXPLANATION OF MAJOR CHANGES |
|---|---|---|---|---|
| OREGON (Continued) | | | | |
| Cougar Lake | $ 740,200 | $ 1,162,600 | $ 870,000 | Replace turbine runner FY 86. Seismic reevaluation study FY 86 and FY 87. |
| Detroit Lake | 1,413,700 | 1,448,400 | 1,543,000 | |
| Green Peter-Foster Lakes | 1,760,700 | 1,721,400 | 2,001,000 | Repair foundation drains and paint tainter gates FY 87. |
| Hills Creek Lake | 455,700 | 437,600 | 567,000 | Structural and embankment instrumentation and monitoring FY 87. |
| John Day Lock and Dam | 10,682,800 | 11,904,600 | 11,858,000 | Major powerhouse modernization and rehabilitation FY 85, FY 86 and FY 87. FY 87 includes major rehabilitation at $3,900,000; see attached justification. |
| Lookout Point Lake | 2,073,400 | 2,211,900 | 2,475,000 | Paint and provide cathodic protection to the penstock head gates FY 87. |
| Lost Creek Lake | 2,536,300 | 2,372,700 | 2,326,000 | Increased water quality analysis study FY 85. |
| McNary Lock and Dam, Lake Wallula | 13,150,100 | 12,557,200 | 11,349,000 | Major powerhouse modernization and navigation channel realigning FY 85 and FY 86. |

NORTH PACIFIC DIVISION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

3. MULTIPLE PURPOSE POWER PROJECTS. (Continued)

OBLIGATIONS

| PROJECT | ACTUAL FY 1985 | ESTIMATED FY 1986 | ESTIMATED FY 1987 | EXPLANATION OF MAJOR CHANGES |
|---|---|---|---|---|
| WASHINGTON | | | | |
| Chief Joseph Dam, Rufus Woods Lake | $5,971,800 | $6,535,700 | $6,480,000 | Procure replacement parts FY 86 and FY 87. Improve fire and security protection FY 87. |
| Ice Harbor Lock and Dam, Lake Sacajawea | 4,167,400 | 5,308,400 | 5,822,000 | Paint spillway gates and reroof powerhouse FY 86. Powerhouse modernization FY 86 and FY 87. Install powerplant control system FY 87 |
| Little Goose Lock and Dam, Lake Bryan | 4,339,200 | 3,796,900 | 4,707,000 | Natural resource study, guidewall anchor cable and pump repair FY 85. Install powerplant control system FY 87. |
| Lower Granite Lock and Dam | 5,709,500 | 8,031,500 | 6,906,000 | Reservoir sediment removal FY 86. Install powerplant control system and sediment study FY 87. |
| Lower Monumental Lock and Dam, Lake Herbert G. West | 3,220,200 | 4,768,000 | 4,507,000 | Install prototype fish screens and conduct fish passage study FY 86. Install powerplant control system FY 87. |
| The Dalles Lock and Dam | 7,696,100 | 8,457,800 | 7,099,000 | Fish ladder modifications FY 85 and FY 86. Improve powerplant control system FY 86. |
| TOTAL - MULTIPLE PURPOSE PROJECTS | $85,300,300 | $94,199,100 | $ 94,525,000 | |

## NORTH PACIFIC DIVISION
## JUSTIFICATION OF ESTIMATE

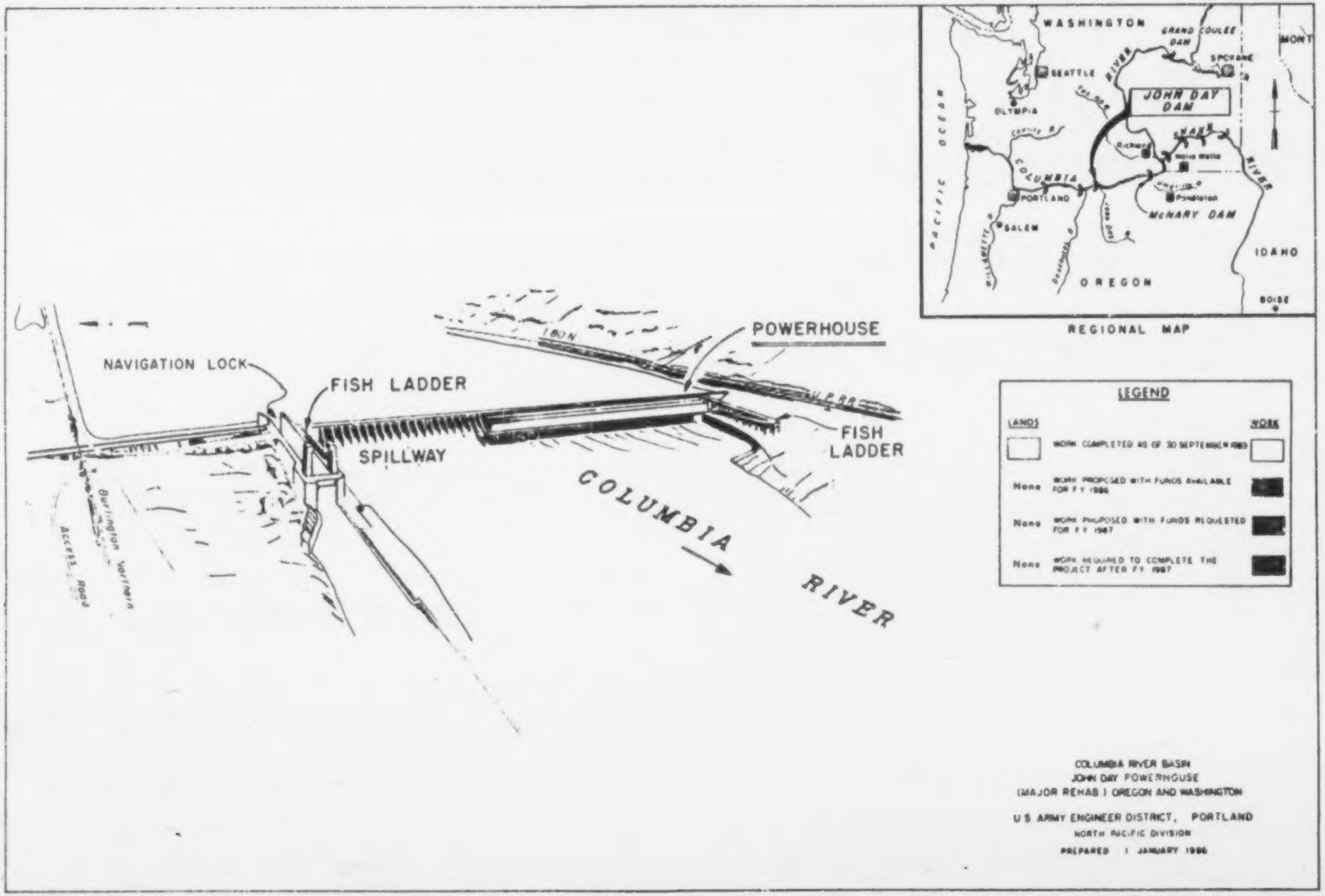
APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

4. PROTECTION OF NAVIGATION. The program request of $7,083,000 provides for accomplishing the work essential to the administration and enforcement of specific laws enacted for the protection of navigation, particularly Section 10, River and Harbor Act, 1899; Section 402 and 404 of FWPCA Amendment of 1972; Section 103 of Marine Protection Research and Sanctuary Act of 1972 involving the issuance and review of permits [illegible]charges into navigable waters; and project condition surveys on some projects for which maintenance is not scheduled in the budget year.

OBLIGATIONS

| PROJECT | ACTUAL FY 1985 | ESTIMATED FY 1986 | ESTIMATED FY 1987 | EXPLANATION OF MAJOR CHANGES |
|---|---|---|---|---|
| General Regulatory Function | $ 5,572,200 | $ 6,453,300 | $ 6,232,000 | Increased requirements in Alaska, Orego and Washington FY 86 and FY 87. |
| Project Condition Surveys | $ 904,300 | $ 904,600 | $ 851,000 | Increased hydrographic condition survey in Alaska, Oregon and Washington FY 85 and FY 86. |
| TOTAL - PROTECTION OF NAVIGATION | $ 6,476,500 | $ 7,357,900 | $ 7,083,000 | |
| GRAND TOTAL | $151,004,800 | $154,000,000 | $155,242,000 | |

## JOHN DAY POWERHOUSE (MAJOR REHABILITATION)
## OREGON AND WASHINGTON


WASHINGTON
GRAND COULEE DAM
SPOKANE
MONT
SEATTLE
OLYMPIA
PACIFIC OCEAN
RIVER
JOHN DAY DAM
COLUMBIA
SNAKE
RIVER
Richland
Walla Walla
PORTLAND
Pendleton
McNARY DAM
SALEM
IDAHO
OREGON
BOISE
REGIONAL MAP
NAVIGATION LOCK
FISH LADDER
SPILLWAY
POWERHOUSE
I-80N
U.P.R.R.
FISH LADDER
COLUMBIA RIVER
Burlington Northern
Access Road
LEGEND
LANDS
WORK
WORK COMPLETED AS OF 30 SEPTEMBER 1985
None WORK PROPOSED WITH FUNDS AVAILABLE FOR FY 1986
None WORK PROPOSED WITH FUNDS REQUESTED FOR FY 1987
None WORK REQUIRED TO COMPLETE THE PROJECT AFTER FY 1987
COLUMBIA RIVER BASIN
JOHN DAY POWERHOUSE
(MAJOR REHAB) OREGON AND WASHINGTON
U S ARMY ENGINEER DISTRICT, PORTLAND
NORTH PACIFIC DIVISION
PREPARED 1 JANUARY 1986

APPROPRIATION TITLE: Operation & Maintenance, General - Multiple-Purpose Power Projects

PROJECT: John Day Powerhouse, Oregon and Washington (Major Rehabilitation)(Continuing)

LOCATION: On the Columbia River at the head of The Dalles Dam pool, River Mile 215.6, about 100 miles east of Portland, Oregon.

AUTHORIZATION: 1950 and 1965 Flood Control Acts (Existing Project)

BENEFIT TO COST RATIO: The remaining benefit-remaining cost ratio is not applicable because monetary benefits have not been quantified.

SUMMARIZED FINANCIAL DATA

| Estimated Total Appropriation Requirement $24,000,000 | | Accum.% of Est. Federal Cost |
|---|---|---|
| Estimated Federal Cost | $24,000,000 | |
| Estimated Non-Federal Cost | 0 | |
| Total Estimated Project Cost | $24,000,000 | |
| Allocations to 30 September 1985 | $3,586,000 | |
| Conference Allowance for FY 1986 | $6,000,000 | |
| Allocation for FY 1986 | $4,900,000 1/ | |
| Allocations to Date | $8,486,000 | 35 |
| Allocation Requested for FY 1987 | $3,900,000 | 52 |
| Scheduled Balance to Complete after FY 1987 | $11,614,000 | |
| Unscheduled Balance to Complete after FY 1987 | 0 | |

| STATUS: (1 Jan 1986) | PERCENT COMPLETE | COMPLETION SCHEDULE |
|---|---|---|
| Entire Project | 15.6 | Sep 1991 |

PHYSICAL DATA (EXISTING PROJECT)

Powerhouse: Number of completed bays initial installation - 16; Number of skeleton bays initial installation - 4; Generator nameplate rating - 135,000 kw; Initial plant capacity - 2,160,000 kw.

1/ Reflects $1,100,000 transfer from the project.

JUSTIFICATION: The importance of John Day Dam to the northwest regional power pool is far greater than may be inferred from its 7 percent share of total NW system output or its 18% share of Corps of Engineers regional production. Because of its large capacity, relative freedom from operating constraints, and strategic location with respect to load centers, transmission lines, and to other major hydroelectric projects, John Day Dam is probably the most important project as far as control of the regional power system is concerned. The North Pacific Division has been continuously monitoring the generator availability rates for all of the Corps of Engineers hydroelectric projects in the Pacific Northwest for the past 27 years. Because all of these projects utilize basically the same maintenance program and all report unit availability based upon identical criteria, the availability datum is extremely useful for projected abnormal situations. The yearly average availability from 1955 to 1981 was 92.5 percent. In 1981, John Day unit availability fell to an all-time low of approximately 83.9 percent, substantially affecting John Day's ability to provide automatic generation control and spinning reserve for the Northwest Power

JUSTIFICATION. (Cont'd)

Pool. To raise John Day's availability rate and maintain optimum availability of 95 percent requires major rehabilitation of the generating units and appurtenant support equipment. It is essential that the rehabilitation program be systematically carried to completion. Failure to perform major rehabilitation will promote deterioration of powerhouse availability. Operation of the power plant for peaking as well as for balancing regional power load variations requires rapid control of generating units to compensate for changing load and voltage conditions. Frequent unit loading and unloading have taxed the turbines and generators in excess of their original design capability. As an example, the number of circuit breakers' "close-open" operations has increased from 14 per day in 1972 to 27 per day in 1981; this not only creates additional cycling on the circuit breakers themselves, but it is also indicative of additional thermal cycling and wear and tear on the turbines, generators, and related features of the generating system. Because the original design did not fully anticipate these additional demands on the generating units, defects are now appearing in them and outage problems have increased, lowering unit availability. A case in point has been turbine blade servomotor piston cap failures. Unit outages resulting from this defect have accounted for much of the reduced unit availability. Anticipated generator stator winding failures in the future would decrease generating availability to below 70 percent.

FISCAL YEAR 1987: The requested amount of $3,900,000 will be applied as follows:

| Item | | Amount |
|---|---|---|
| Powerhouse Rehabilitation | | $3,705,000 |
| Engineering and Design | | 150,000 |
| Supervision and Administration | | 45,000 |
| | Total | $3,900,000 |

NON-FEDERAL COSTS: None

STATUS OF LOCAL COOPERATION: None required for major rehabilitation.

COMPARISON OF FEDERAL COST ESTIMATE: The current Federal cost estimate of $24,000,000 is a decrease of $2,600,000 from the latest estimate ($26,600,000) submitted to Congress. This change includes decreases of $207,000 for adjustments in the estimated inflation allowance through the construction period and $2,784,000 primarily due to favorable bids and re-evaluation of hired labor costs. These decreases were partially off-set by an increase of $391,000 for additional engineering and design work.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: An overall environmental statement has been filed for the John Day project to document impacts and describe operational factors. The final impact statement was filed with CEQ on 29 July 1975.

### RECOGNITION OF MR. MYERS

Mr. **Bevill**. The Chair recognizes Mr. Myers.

Mr. **Myers**. Thank you, Mr. Chairman.

At this time I don't have any questions.

Mr. **Bevill**. The Chair recognizes Mr. Dicks.

Mr. **Dicks**. Mr. Chairman, Mr. Myers, I appreciate your letting me, as a former member of this subcommittee, come here today. General Robertson, it is good to be here. I am sorry I missed most of your presentation. I just had a few questions that I would like to ask, and they will be very specific.

### BLAIR AND SITCUM WATERWAYS, WASHINGTON

One project, as you know, that I have been concerned about is the Blair and Sitcum Waterways project and a very important bridge replacement project in Tacoma, Washington in my district. I just want to know—I don't believe there is a budget request for that in 1987, is that correct?

General **Robertson**. Yes, sir. That is correct.

Mr. **Dicks**. What are the obstacles to resuming the CP&E efforts on this project?

General **Robertson**. Sir, the project sponsor, Port of Tacoma, will need to identify adequate and acceptable disposal site or sites in the absence of an Indian Land Claims Settlement which would have resolved most issues related to the disposal of Blair Waterway sediments. It is expected that the Port will pursue resolution of the disposal sites on a case by case basis.

Mr. **Dicks**. In the absence of an Indian Land Claims Settlement and the project sponsor being able to provide the disposal sites, what is the next increment of work that could be accomplished for the Blair and Sitcum Waterways Study?

General **Robertson**. Pending the local sponsor resolution of disposal site for the dredged material, the next step in the study is completion of bridge replacement studies. The estimated cost of this work is $450,000.

Mr. **Dicks**. What is the Non-Federal traditional cost sharing and what is the cost sharing as proposed by S. 1567?

General **Robertson**. Of a total estimated project cost of $37,416,000 the Non-Federal cost share would be $3,216,000 under traditional cost sharing including lands, easements, rights of way, relocations, bridges, dredge disposal and berth dredging. Under S. 1567 the Non-Federal cost share would be $11,766,000 which includes the traditional items plus 25% of general navigation items which are the remaining bridge relocation and dredging costs.

### PUGET SOUND DREDGE DISPOSAL STUDY

Mr. **Dicks**. What is the status of the Puget Sound Dredge Disposal study? Where are we on that particular one?

General **Robertson**. We are staying right on schedule, sir. As you know, we have a two-phase study. The first phase is to investigate the critical areas of Tacoma-Seattle-Everett harbors. We are now in the process of identifying potential dredge disposal areas and doing the modeling for disposal. The modeling will be finished this year, phase one will be completed in 1987.

The second phase will be to study the remainder of Puget Sound to determine other dredge disposal areas. This phase will be started this year and completed in 1988.

### MUD MOUNTAIN DAM, WASHINGTON

Mr. DICKS. All right.

What is your budget request for Mud Mountain?

General ROBERTSON. We have $1.3 million in FY 1986, and we have $4 million budgeted for FY 1987.

Mr. DICKS. Is that enough?

General ROBERTSON. Yes sir, for the currently approved program. However, in FY 1986 we are studying a seepage problem in the dam core which could result in an additional requirement for Mud Mountain in FY 1987. Sufficient funds are budgeted to meet anticipated FY 1987 requirements to correct the seepage problem. Therefore our FY 1987 capability for this project is the same as the budget request.

### GRAYS HARBOR, WASHINGTON

Mr. DICKS. How much is included in your Fiscal Year 1987 request for the Port of Grays Harbor, and is this sufficient for that project?

General ROBERTSON. We have $770,000, in the budget sir, and that is our capability. We are on schedule and will complete CP&E studies in FY 1987.

### RAILROAD BRIDGE REPLACEMENT COSTS

Mr. DICKS. Thank you.

Why is the Corps of Engineers now requiring local sponsors of navigation port projects to cost share in railroad bridge replacement cost?

General ROBERTSON. Administration policy and pending legislation would require such cost sharing.

Mr. DICKS. Has that been authorized? Does that require authorizing legislation?

General ROBERTSON. It has not been authorized, sir. However, we are programming for the cost sharing policy worked out between the administration and the Congress.

Mr. DICKS. These costs have traditionally been paid by the Federal Government and railroad bridge owners in accordance with cost sharing principles of the Truman-Hobbs Act with no participation by the local sponsors, is that correct?

General ROBERTSON. Yes, sir. In the past under the Truman-Hobbs Act the railroad has paid the part of the costs attributable to direct and special benefits accruing to the owner and the Federal government has paid the rest.

Mr. DICKS. That is now changing?

General ROBERTSON. Yes, sir, the local interests will have to pay a portion of the Federal costs.

### PUGET SOUND AND ADJACENT WATERS, WASHINGTON

Mr. Dicks. How much is included in your budget request for surveys for Puget Sound and Adjacent Waters, and could you describe this program for fiscal year 1987?

General Robertson. For Fiscal Year 1987, sir, we have $351,000 programmed. Draft reports on the Snoqualmie River flood control project and the Neah Bay and the Clallum Bay navigation projects will be completed in November 1987.

### BELLINGHAM AND OLYMPIA HARBORS, WASHINGTON

Mr. Dicks. Could you tell me what is in your budget for surveys on Bellingham and Olympia?

General Robertson. Yes, sir, $150,000 on each study to initiate and complete the reconnaissance studies.

### EAST, WEST AND DUWAMISH WATERWAYS, WASHINGTON

Mr. Dicks. How much is requested in your budget for the Duwamish project, and do you intend to modify that request?

General Robertson. For the East-West and Duwamish Waterway, sir, we have $750,000 programmed for 1987 to continue the study. It is currently scheduled for completion of CP&E in March 1990.

### MOUNT SAINT HELENS, WASHINGTON

Mr. Dicks. Given the desirability for an early start for the Mount Saint Helens Sediment control project; from an engineering point of view is the Corps prepared to proceed in Fiscal Year 1986 with a project start? What could the Corps do this year on the sediment retention structure if sufficient funds were available?

General Robertson. We could initiate construction, sir, if funds were available in Fiscal Year 1986.

Mr. Dicks. How will the funds be used?

General Robertson. The 1986 money we have is for the dredging related to the interim solution; that is, primarily for dredging to maintain the one hundred-year interim protection for the downstream areas. No funds, as yet, have been appropriated for construction of the authorized sediment retention structure.

Mr. Dicks. And what is your capability for 1987?

General Robertson. For 1987, sir, we have a requirement of $17 million, which is the same as our budget request. These funds will be used to initiate the construction of the sediment retention structure.

Mr. Dicks. Short of construction for the coffer dam, what steps could the Corps take this year to pave the way for a major contruction effort in 1987?

General Robertson. Sir, we are continuing with engineering and design using available funds. If construction funds were made available in FY 1986 we could initiate the site preparation and dewatering activities currently included in the FY 1987 program at an estimated cost of about $1.4 million.

### VALUE OF POWER IN PACIFIC NORTHWEST

Mr. DICKS. How many hydro-electric generating facilities within the Bonneville Power Administration are operated by the Corps of Engineers? Who owns them?

General ROBERTSON. The Corps of Engineers owns and operates 21 hydro-electric generating facilities within the Bonneville Power Administration area. There are a total of 153 operating units with an installed capacity of 12,550 MW.

Mr. DICKS. What is our total investment in these facilities in present day dollars?

General ROBERTSON. To date the investment cost allocated to hydropower projects is about $4.1 billion. When these actual project costs are price leveled upwards to reflect 1985 construction costs, the total cost of these facilities would be $11.5 billion.

Mr. DICKS. How much would it cost to construct these facilities in current day dollars?

General ROBERTSON. It would cost approximately $11.5 billion based solely on price indexing of historic costs to 1985 dollars. It must be recognized, however, that building these facilities today would cost considerably more due to more stringent requirements for mitigating for environmental losses, cultural resources, and relocation. For example, the most recently constructed major hydropower project was Bonneville 2nd Powerhouse which cost almost $1.5 million per MW of capacity. If all the hydropower facilities (12,550 MW) were constructed at this $1.5 million/MW, the cost would be $18.8 billion.

Mr. DICKS. How many kilowatt hours of electricity has been generated by these facilities?

General ROBERTSON. Nearly 1.3 trillion kilowatt hours of electricity have been generated at these hydropower facilities.

Mr. DICKS. What is the value of that electricity in present day dollars?

General ROBERTSON. Based on the 1985 average BPA wholesale rate of 22 mills/Kwh, the current value of the 1.3 trillion Kwh is $28.6 billion.

Mr. DICKS. What would be the cost of this electricity had it been produced by the next least cost energy alternative?

General ROBERTSON. If the hydropower facilities had not been constructed, a mix of alternative generating resources would have been built. In 1985 the average cost of providing electricity in the United States, from a wide mix of alternatives, was about 41 mills/Kwh. The value of the 1.3 trillion Kwh of electricity at 41 mills/Kwh is $53.3 billion.

### PRIVATIZATION OF HYDROPOWER

Mr. DICKS. The Corps of Engineers, of course, operates the hydroelectric projects in the Pacific Northwest and there has been a proposal by the administration to either privatize or sell those projects.

Has the Corps looked at this in terms of the issues that are involved in the administration's proposal?

General ROBERTSON. Yes, sir, we have looked into it somewhat in preparation for previous hearings that were held on that subject.

Mr. **Dicks**. So, you have testified before other committees about that?

General **Robertson**. No, sir. But we did provide information for testimony by the Assistant Secretary of the Army and Office of the Chief of Engineers.

Mr. **Dicks**. If I am interested in getting the Corps' views on this—did you testify before Mr. Weaver's committee?

General **Robertson**. No, sir, I personally did not.

Mr. **Dicks**. All I would like to say, just to my colleagues, is that those of us who represent the Pacific Northwest have very, very grave reservations about this particular proposal.

There is something like 10,000 contracts that would have to be renegotiated, and frankly, I think both on a bipartisan basis there is great skepticism about selling of these projects, and I know that this committee has been a forthright supporter of the development of these projects over the years, and I just wanted to say today on the record that we in the Northwest have reservations about this, not that the Corps has made this proposal—this is something that comes out of OMB.

We all understand that, but we have very serious doubts about the feasibility of doing this.

Thank you, Mr. Chairman.

Mr. **Bevill**. Well, Mr. Eisenhower, you know, wanted to sell the TVA, and we still have three branches of government. I am not going to lose any sleep about this proposal.

Mr. **Dicks**. We appreciate this committee's help over the years in supporting these very legitimate requests.

Mr. **Bevill**. I have several questions here we are going to put in the record to be answered and some of the other members will also have questions.

[The questions and answers follow:]

## BELLINGHAM HARBOR AND OLYMPIA HARBOR WASHINGTON

Mr. **Bevill**. Describe the Bellingham Harbor and Olympia Harbor, Washington Studies which are budgeted for initiation this year.

General **Robertson**. Sir, Bellingham, Washington is a port city with a population of 46,000 located on the northeastern shore of Puget Sound. The Port of Bellingham handles about 2 million tons of commerce annually, including log shipments and ore and mineral imports, through four existing Federal navigation projects in Bellingham Harbor. The Port has requested deepening of Whatcom Creek Waterway to accomodate the larger vessels serving Pacific Rim operations. Because current vessel drafts of 33 feet are greater than the existing 30-foot channel depth, ships moor on the tides and are delayed, thereby limiting commodity movement through the port. Despite delays, vessel traffic in 1982, increased by 25 percent over the previous 10 years. Vessel drafts are expected to increase to 39 feet in the future.

Olympia, Washington, the state capitol, is a city of 29,000 population located on the southern shore of Puget Sound with port facilities also serving trade with the Pacific Rim nations. Approximately 1 million tons of commerce, mostly timber products, are presently handled at the Port of Olympia annualy. However, the Port is actively expanding and diversifying its present waterborne commerce. The harbor is divided into East Bay and West Bay by a Port-constructed peninsula. The current Federal project dimensions are inadequate for the world fleet of vessels that call on the Port of Olympia and a five-year plan, completed by the Port in February 1984, indicates a continued growth in commerce and need for channel and turning basin deepening in West Bay. Accordingly, the Port has requested the Federal study to address these navigation problems.

### SOUTH CENTRAL REGION OF ALASKA

Mr. Bevill. In connection with the Southcentral Region of Alaska study describe the problems being encountered by the Fire Island Shoal and what you are doing about the problem.

General Robertson. Sir, a technical report on the Fire Island Shoal has recently been completed. Our studies find that the shoal appears to be dissipating as it migrates toward Fire Island. Our report suggests remarking of the channel by the Coast Guard and tugboat assistance as the best solution to navigation problems associated with Fire Island Shoal. The technical report also recommends continued monitoring of Fire Island Shoal by means of periodic surveys to verify location, rate of movement, and eventual dissipation. If the shoal does not dissipate, the Coast Guard will mark a new naviation route north and west of the shoal.

### RIVERS AND HARBORS IN ALASKA

Mr. Bevill. In connection with the study of Rivers and Harbors in Alaska, what factors led you to believe that maintaining an improved shipping channel at False Pass is not economically feasible?

General Robertson. Sir, in evaluating the economic feasibility of improving the False Pass channel for navigation, consideration was given to transportation savings that would be realized by deep draft vessels transiting between the Gulf of Alaska and Bering Sea. Specifically, about one day's travel time would be saved if vessels could transit False Pass in lieu of transiting around Unimak Island through Unimak Pass. These estimated benefits, when compared to the annual estimated costs for several channel improvement plans resulted in benefit-to-cost ratios less than one. The best plan benefit-cost-ratio was 0.3 to 1.

### COLUMBIA RIVER AND TRIBUTARIES

Mr. Bevill. With regard to the Columbia River and Tributaries study, update the Committee on the system planning underway to identify alternative plans, future operation, management and use of the Columbia River and its major tributaries.

General Robertson. Sir, in early FY86 a series of basin summary reports were completed to assist in identifying conceptual alternative plans for the Columbia River Basin. Potential project measures, sites, and operational changes will be identified as components of alternative system plans and will be analyzed in further detail during FY 1986 and 1987. The Regional Hydropower database is nearing completion and is entering an operational and maintenance phase, whereby participants including the Federal Energy Regulatory Commission can use the database for a variety of power and fishery related studies. The flood control operation study is in its second and concluding year. This study is reviewing the adequacy of current flood control operating procedures for Columbia River Basin flood control reservoirs to determine whether current operating assumptions and procedures are adequate and appropriate. Plans of other agencies including the Northwest Power Planning Council are being given full consideration in the CR&T System planning process.

### UMPQUA RIVER AND TRIBUTARIES, OREGON

Mr. Bevill. How extensive are the "detailed foundation and materials investigations" you are planning with regard to the Umpqua River and Tributaries, Oregon study? Is drilling involved?

General Robertson. Sir, the detailed foundation and materials investigation of the Umpqua River and Tributaries, Oregon study planned for FY 1987 includes subsurface drilling at two potential damsites, development of preliminary design criteria, and inventory of local construction materials.

### SAINT PAUL ISLAND HARBOR, ALASKA

Mr. Bevill. Describe the St. Paul Island Harbor, Alaska on which continuation of planning and engineering is proposed for initiation in FY 1987.

General Robertson. Sir, St. Paul Island is the northernmost island of the Pribilof Island group, presently serving as the air transportation hub for both St. George and St. Paul Islands. The Pribilof Islands are located adjacent to fertile fishing ground resources as well as potential oil and gas fields of the Norton, St. George, North Aleutian, and Navarin Basins. A feasibility report recommends construction of navigation improvements at St. Paul, including an 1,800-foot-long breakwater, an entrance channel, a maneuvering area, and a mooring area to service existing commercial and subsistence fishing fleets. The recommended project would cost about $24.8 million.

MOUNT SAINT HELENS, WASHINGTON

Mr. Bevill. Describe the work planned in connection with the Mt. St. Helens, Washington project for which you are requesting funds to initiate in FY 1987.

General Robertson. Work planned with the FY 1987 funds for Mt. St. Helens Sediment Control Project include engineering and design and initiating construction of a sediment retention structure, including the integral coffer dam.

Mr. Bevill. What other budgeted funds are related to Mt. St. Helens.

General Robertson. Funds in the amount of $10 million are budgeted under the Mt. St. Helens and Vicinity Project primarily for continuation of dredging on the Toutle and Cowlitz Rivers, sediment monitoring, and other miscellaneous work to assure 100-year flood protection until implementation of a permanent solution.

Mr. Bevill. What funds have been expended to date for work associated with the eruption of Mt. St. Helens?

General Robertson. As of 1 January 1986, the Corps of Engineers has spent $389.7 million on work associated with the Mt. St. Helens eruption.

CHENA RIVER LAKES, ALASKA

Mr. Bevill. How are you able to decrease the cost of the Chena River Lakes, Fairbanks, Alaska project by $54 million?

General Robertson. The $54.0 million cost decrease for Chena River Lakes project is primarily a result of deferring construction of levee protection.

Mr. Bevill. Why are you deferring the construction of levee protection on this project?

General Robertson. The decision to defer the construction of levee protection was made base and current analysis of the river erosion patterns which show that additional protection works are not needed in the immediate future.

LOWER COLUMBIA RIVER BASIN BANK PROTECTION

Mr. Bevill. I note you will transfer $225,000 to the Lower Columbia River Basin Bank Protection project in the current fiscal year. How will those funds be utilized?

General Robertson. Sir, we have transferred the $225,000 to the project for the continuing contract for Tansy Railroad Location in the vicinity of Hammond and Warrenton, Oregon. This increase was the result of a more detailed design, revising the scope of work from a two layer to a three layer stone revetment and a contract modification to compensate for unstable soil conditions encountered during the excavation.

BONNEVILLE SECOND POWERHOUSE

Mr. Bevill. In connection with the Bonneville Second Powerhouse project, what is required to correct fish guidance efficiency at a cost of $4 million?

General Robertson. Results of studies to date have shown that the downstream juvenile fish approaching the powerhouse are not being efficiently deflected and bypassed by the existing turbine screens and collection system. With the $4 million requested in FY 1987, we are continuing to develop, test and evaluate various alternative methods that will help improve the efficiency of by-passing these fingerlings.

LOWER SNAKE FISH AND WILD LIFE COMPENSATION

Mr. Bevill. Last year we discussed the problems you are encountering acquiring land in connection with the Lower Snake River Fish and Wildlife Compensation Project. Would you bring the Committee up to date on this issue?

General Robertson. Sir, efforts to acquire fee and easement lands for wildlife compensation and fisherman access were marginally successful during 1985. Washington Department of Game personnel have located potential willing sellers for portions of land for upland game bird hunting and steelhead fishing. Easements for fisherman access were approved for purchase on four parcels on Asotin Creek, while appraisals were initiated or completed on more than ten upland game bird hunting sites. However, Washington Department of Game negotiations with several landowners with bird hunting sites, indicate that landowners are requiring easement prices exceeding those established by the appraisals. Thus, it still appears that little land will be acquired under the upland game bird hunting portion of the Compensation Plan under current criteria. The Special Report to Congress on the Lower

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: (Cont'd)

The provisions of Section 404 of the Clean Water Act do not apply to remaining items of work because the project improvements do not involve the placement of fill material or the discharge of dredged material in the waters of the United States.

OTHER INFORMATION: Initial construction of the powerhouse was completed in 1971. A reconnaissance report, turbine-generator equipment studies, and initial engineering and design and construction efforts were initially financed by Operation and Maintenance in FY 1982. Funds to initiate major powerhouse rehabilitation under Operation and Maintenance were provided in FY 1985. It is planned to rehabilitate 2 turbine-generator units per year. Overlapping outages of two units will occur for approximately one month as any one unit completes rehabilitation.

## HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: North Pacific
District: Portland

Project: John Day Powerhouse, Oregon and Washington
(Major Rehabilitation)

| Item | Estimates Presented to Congress ($1,000)<br>Original Baseline | Cumulative Changes | Last | Incremental Change | Current |
|---|---|---|---|---|---|
| Federal Cost<br>(Price Level) | 28,300<br>(FY 1985) | | 26,600 1/ | | 24,000 1/2/ |
| Reason for Change | | (-1,700) 1/ | | (-2,600) 2/ | |
| a. Price Escalation | | 1,092 | | -207 | |
| b. Design Changes | | | | | |
| c. Additional Function Added Under General Authorization | | | | | |
| d. Authorized Modification | | | | | |
| e. Post-Contract Award and Other Estimating Adjustments | | -2,792 | | -2,393 | |
| f. Schedule Changes | | | | | |
| g. Sundry | | | | | |
| h. Real Estate | | | | | |

1/ Includes an allowance for estimated inflation through the construction period.
2/ Includes $207 for adjustments in the estimated inflation allowance through the construction period.

REPORTS CONTROL SYMBOL: DAEN-CWB-13

| | |
|---|---|
| APPROPRIATION TITLE: CONSTRUCTION GENERAL<br>OPERATION AND MAINTENANCE, GENERAL | CLASSIFICATION:<br>MULTIPLE-PURPOSE POWER PROJECT |

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM | PROJECT COST ESTIMATE | TOTAL TO 30 SEP 19 85 | CURRENT FY 19 86 | BUDGET FY 19 87 | BALANCE TO COMPLETE AFTER FY 19 87 |
|---|---|---|---|---|---|---|
| | (a) | (b) | (c) | (d) | (e) | (f) |
| 1 | POWERPLANT | 22,524,000 | 3,045,000 | 4,485,000 | 3,705,000 | 11,289,000 |
| 2 | ENGINEERING AND DESIGN | 1,075,000 | 381,000 | 365,000 | 150,000 | 179,000 |
| 3 | SUPERVISION AND ADMINISTRATION | 401,000 | 138,000 | 72,000 | 45,000 | 146,000 |
| 4 | | | | | | |
| 5 | | | | | | |
| 6 | | | | | | |
| 7 | | | | | | |
| 8 | TOTAL APPLIED COSTS (FED FUNDS ONLY) | 24,000,000 | 3,564,000 | 4,922,000 | 3,900,000 | 11,614,000 |
| 9 | UNDISTRIBUTED COSTS (NONE) | | | | | |
| 10 | TOTAL PROJECT COSTS (FED FUNDS ONLY) | 24,000,000 | 3,564,000 | 4,922,000 | 3,900,000 | 11,614,000 |
| 11 | PENDING ADJUSTMENTS (NONE) | | | | | |
| 12 | TOTAL COSTS (FED FUNDS ONLY) | 24,000,000 | 3,564,000 | 4,922,000 | 3,900,000 | 11,614,000 |
| 13 | UNDELIVERED ORDERS | | 22,000 | -22,000 | | |
| 14 | TOTAL OBLIGATIONS | 24,000,000 | 3,586,000 | 4,900,000 | 3,900,000 | 11,614,000 |
| 15 | | | | | | |
| 16 | | | | | | |
| 17 | | | | | | |
| 18 | | | | | | |
| 19 | | | | | | |
| 20 | METHOD OF FINANCING | | | | | |
| 21 | ALLOCATIONS | | 3,586,000 | 4,900,000 1/ | | |
| 22 | UNOBLIGATED CARRYOVER FROM PRIOR YEAR | | | 0 | | |
| 23 | TOTAL FUNDS AVAILABLE FOR OBLIGATIONS | | | 4,900,000 | | |
| 24 | ALLOCATIONS REQUIRED | | | | 3,900,000 | 11,614,000 |
| 25 | | | | | | |
| 26 | | | | | | |
| 27 | 1/ Reflects $1,100,000 transfer from | | | | | |
| 28 | the project. | | | | | |
| 29 | | | | | | |
| 30 | | | | | | |
| 31 | | | | | | |
| 32 | | | | | | |
| 33 | | | | | | |

| | | | |
|---|---|---|---|
| EFFECTIVE DATE<br>1 JAN 86 | DIVISION NORTH PACIFIC<br>DISTRICT PORTLAND, OREGON | REGION COLUMBIA-NORTH PACIFIC<br>BASIN MID-COLUMBIA | PROJECT JOHN DAY POWERHOUSE, OR & WA<br>(MAJOR REHABILITATION) |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986

Snake River Fish and Wildlife Compensation Plan was transmitted to the Washington level for review in July 1983. That report detailed this problem and recommended the acquisition criteria be modified to allow fee acquisition of whole farm units.

### CHIEF JOSEPH DAM, WASHINGTON

Mr. Bevill. What is the status of the turbine deficiencies issue at Chief Joseph Dam, Washington?

General Robertson. Sir, the turbines for the Chief Joseph Additional Units project failed to meet the contractor guaranteed efficiency of 92.5 percent by producing only 87.9 percent. On 27 January 1983, the contracting officer directed the contractor to correct the deficiency. The contractor offered a monetary settlement of $2.5 million instead which was considerably less than the cost of correcting the deficiency. This matter has not been resolved. On 29 January 1986 the contractor increased his offer which is now being evaluated.

### WALLA WALLA DISTRICT OFFICE BUILDING

Mr. Bevill. The FY 1985 Supplemental Act authorized new buildings and facilities at the Walla Walla District. What is the status of the work?

General Robertson. The new building and facilities for Walla Walla District Office are currently under design. We expect to secure the real estate this spring. The FY 87 Plant Replacement and Improvement Programs of the Revolving Fund includes the funds to initiate construction. The building could be occupied by December 1987.

### PUGET SOUND DREDGE DISPOSAL STUDY

Mr. Bevill. The estimates reflect funding increases in FY 1986 and FY 1987 related to a study of unconfined open water disposal of dredged material in Puget Sound. Would you discuss this issue including the total cost of this work?

General Robertson. The Puget Sound Dredged Disposal Analysis study is a cooperative effort with the Environmental Protection Agency and the State of Washington. The purpose of the study is to identify acceptable dredged material disposal sites in waters of Puget Sound. The study was started in FY 1985 and is scheduled to be completed in FY 1988. The Corps' share of the funding will be approximately $2.5 million through FY 1987.

### BLUE RIVER LAKE, OREGON

Mr. Bevill. Why is a seismic reevaluation study required at Blue River Lake, Oregon?

General Robertson. An earthquake and fault study conducted for this project in 1983 established possible ground motion which could exceed those for which the structure was designed to resist. The objective of this study is to evaluate the potential damages to the dam embankments, concrete structures and foundation in the event of a major earthquake.

## Questions Submitted by Congressman Bonker

### MOUNT SAINT HELENS, WASHINGTON

*Question.* The eruption of Mount St. Helens, Washington on May 18, 1980 deposited some 3 billion cubic yards of volcanic sediment in a 17-mile long debris avalanche in the Toutle River valley, creating one of the nation's worst sediment problems. Although Congress authorized a permanent solution to the sediment problem last year (P.L. 99-88), no funding has yet been made available to begin construction this year, as originally planned. If the recent storm that devastated California had been 700 miles north, what would have been the effects on Mount St. Helens?

Answer. Serious flooding would have occured. Such an event would cause major flooding along the entire 20 mile reach of the Lower Cowlitz River with major damage at the communities of Castle Rock, Lexington, Kelso and Longview. The duration of flooding would be several weeks at Kelso and Longview. The north-south transportation system would be severely damaged at the Interstate Highway (I-5) and railroad bridges which cross the mouth of the Toutle River. In addition, due to the magnitude of this storm sediment deposition in the Columbia River navigation channel could cause major disruption of commercial navigation. The value of these damages could exceed $200,000,000.

We estimate that approximately 25 mcy of sediment would erode from the debris avalanche. Of this amount, 3 mcy would deposit in Toutle River, 5 mcy would deposit in the Cowlitz River, and the remainder would be carried through to the Columbia River. The quantity of Columbia deposition would depend upon actual flow conditions in the Columbia River.

In the vicinity of Castle Rock, the channel capacity would be seriously reduced. The debris avalanche would be greatly disrupted resulting in the renewal of high-yield erosion rates. These higher sediment estimates increase the probability that frequent, significant flooding would occur in the future along the Cowlitz and that the Columbia River navigation channel would be impacted for at least several years.

*Question*. Specifically, what work on the Mount St. Helens sediment solution was scheduled for FY 1986, how much would this cost, and would the Corps of Engineers be able to complete this work if sufficient funds were made available in the near future?

Answer. The feasibility report contained a schedule with a construciton start in FY 1986 for $17 million. This consisted of the coffer dam for $15.6 million, dewatering for $1.0 million, and the sediment retention structure site clearing and associated access road for $0.4 million. It is too late to complete all this work in FY 1986 even if funding were made available in the near future.

*Question*. Short of construction of the coffer dam, what steps could the Corps take this fiscal year on the sediment solution to pave the way for major construction effort in FY 1987, and what costs would be associated with these measures?

Answer. Sir, we still could proceed with the dewatering work for $1.0 million and the site clearing and associated access road for $0.4 million.

## Questions Submitted by Representative Don Young

### EROSION CONTROL PROJECTS IN ALASKA

*Question*. What is the current status of erosion control projects in Alaska, particularly those located in Bethel and Homer? What steps can be taken to expedite the Homer erosion project?

Answer. Continuation of Planning and Engineering at Bethel is scheduled for completion in 1986. The design includes methods to protect the toe area of bulkheads built by the City of Bethel at the fuel depot and upstream near Mission Road. In addition, the Federal project would include bank protection measures along unimproved reaches. Temporary rock protection for the toe of the fuel depot bulkhead was installed with Corps and State emergency funds in 1985; and similar work is planned for approximately 300 feet of bulkhead at the Mission Road area this spring. A reconnaissance report for Homer Spit erosion, was recently completed which recommended that a feasibility investigation be initiated. This work will proceed in Fiscal Year 1986 pending completion of an agreement with the State of Alaska to share the feasibility study costs. The State has indicated its willingness to participate in study cost-sharing. The study will focus on the riprap and beachfill alternative. The President's Fiscal Year 1987 budget includes funds to finance the Federal share of the feasibility study which is scheduled for completion early in 1988. Because of the complex nature of the problem, the present schedule provides for the earliest possible completion. However, we are phasing the study so the State of Alaska can use interim results to pursue accelerated design and construction of riprap for near-term protection of the Homer Spit road. The reconnaissance study of possible erosion control at Galena is nearing completion by the District Engineer and will be submitted to the Division Engineer this spring. Other potential erosion protection projects are being studied within the Rivers and Harbor, Alaska Study. Separate from these actions, we are analyzing options to respond to Section 115 of the FY 1986 Continuing Resolution Authority which directs the Corps to accomplish emergency bank stabilization at Bethel, Dillingham and Galena.

*Question*. What are the plans for the next five years for erosion control projects in Alaska?

Answer. In addition to the Bethel, Homer and Galena studies discussed above, the Coastal Erosion Interim of the Rivers and Harbors Study is evaluating coastal erosion problems throughout Alaska. At this time, investigations are underway at ten locations: Dillingham, Naknek, Ekuk, Clarks Point, Egegik, Port Heiden, Ouzinkie, Larsen Bay, and Karluk and Kasilof. Several more areas may be added to this list as a result of an inquiry that was recently sent to Alaskan coastal communities. Detailed studies will be completed at locations where the estimated benefits of a solution exceed the estimated cost of erosion control measures.

### PRIORITY OF ALASKA PROJECTS

*Question.* Please list by priority those projects which the Corps views as most important for the fiscal years 1987 through 1991, and anticipated dollar needs for those projects?

Answer. We consider the highest priority those projects nearing completion. Chena River Lakes and Snettisham are in that category. The President's FY 1987 budget contains $7.0 million to complete the Chena Project and $10.8 million to continue the Snettisham project. An additional $17.2 million will be required after FY 87 to complete Snettisham. Next in priority is the small, not specifically authorized, harbor projects (Section 107). The individual projects are discussed below. Funding needs are dependent on cost-sharing formulas and the local sponsor's ability to finance the non-federal share of the project. We have numerous potential erosion projects around the state which have a high priority; however, studies have not progressed far enough to estimate construction funding requirements.

### STATUS OF HARBOR PROJECTS

*Question.* What is the current status for projects in Alaska for improvements of harbors under Section 107, specifically, what is the status of the projects in Mekoryuk, Dillingham, Juneau and Saxman?

Answer. The current status of harbor improvement planning for Alaska under Section 107 is as follows: Appraisal Study phase—Ouzinkie; Detailed Project Study (DPS) phase—Chignik, Larsen Bay, Sand Point, and Whittier; Plans and Specifications (P&S) phase—Dillingham, Juneau, Seward, and Saxman. The Mekoryuk small boat harbor project is scheduled for construction this year. Harbor improvements at Seward (P&S completed), at Juneau (P&S 80 percent complete), at Saxman (P&S 40 percent complete), and at Whittier (DPS 80 percent complete) rely mainly on recreation benefits to be economically feasible. Administration policy precludes the use of recreation benefits to economically justify harbors. This policy is reflected in the Administration's budget proposals for both FY 1986 and 1987. Thus, there are no plans to advance these four projects beyond the current phase.

*Question.* What is the status for the improvement of St. Paul Harbor and what can be done to expedite this effort?

Answer. The FY 1987 President's Budget has requested $400,000 for St. Paul Harbor to initiate Continuation of Planning and Engineering (CP&E) studies, including preparation of the General Design Memorandum and the Environmental Impact Statement. Due to the nature and extent of investigations planned, this CP&E study would be difficult to expedite. Planning and Engineering is scheduled to be completed in FY 1988.

### CLOSING

Mr. BEVILL. Thank you very much, General, for a very fine presentation.

Mr. DICKS. Thank you, Mr. Chairman, for letting me come this afternoon.

MONDAY, FEBRUARY 24, 1986.

## NORTH CENTRAL DIVISION

### WITNESSES

BRIG. GEN. JOSEPH PRATT, DIVISION COMMANDER
BING C. CHIN, CHIEF, PROGRAM DEVELOPMENT OFFICE
RALPH P. MECKEL, ASSISTANT CHIEF PROGRAM DEVELOPMENT OFFICE
KEN H. MURDOCK, CHIEF, PLANNING DIVISION
ZANE M. GOODWIN, CHIEF, ENGINEERING DIVISION

Mr. BEVILL. General Pratt, we are pleased to have you and your staff. You may proceed as you wish.

### GENERAL STATEMENT

General PRATT. Mr. Chairman, members of the committee, I am Joe Pratt, the new division engineer for the North Central Division.

I replaced General Jerry Hilmes in August 1985. It is my pleasure to appear before your committee and to report on the division status. With me is Bing Chin, my Chief of Program Development and his assistant, Ralph Meckel. Also with me is Ken Murdock, Chief, Planning Division, and Zane Goodwin, Chief, Engineering Division.

### AREA OF RESPONSIBILITY

Our area of responsibility covers the North Central United States, from North Dakota to the St. Lawrence River, and from Canada to within 50 miles of St. Louis.

The Division area covers 428,000 square miles and includes 20 percent of the U.S. population, including 95 congressional districts. We have five district offices. They are located in Buffalo, New York; Detroit, Michigan; Chicago and Rock Island, Illinois; and St. Paul, Minnesota.

The North Central Division has a large portion of its annual budget devoted to operating, maintaining, and the rehabilitation of existing facilities. The division operates and maintains navigation improvements at 72 commercial channels and harbors, 42 commercial locks, and approximately 900 miles of navigable waterways on the Mississippi and Illinois Rivers.

In addition, we operate and maintain 16 reservoirs primarily for flood control.

### FISCAL YEAR 1987 BUDGET REQUEST

I would like to present a summary of our Fiscal Year 1987 budget request and report some of our accomplishments in our civil works program.

Our Fiscal Year 1987 budget request totals about $267 million and is summarized on this slide. This request is $53 million more than the Fiscal Year 1986 allocation, with the increase primarily in operation and maintenance and in the construction program. I will address the specifics later in the testimony.

## GENERAL INVESTIGATIONS

The Fiscal Year 1987 budget request for general investigations includes funds for 18 surveys, five continuation of planning and engineering studies, and five advance engineering and design projects.

We have one new flood damage prevention study on the Moose and Black Rivers in New York, and three new continuation of planning and engineering studies: Duluth-Superior Harbor, Minnesota and Wisconsin, and Lorain Harbor, Ohio, for commercial navigation; and Root River at Houston, Minnesota, for flood damage prevention.

In Fiscal Year 1987, we will complete the six studies shown here. The first five are feasibility studies and include one commercial navigation study, three flood damage prevention studies, and one special study. The sixth is a continuation of planning and engineering study for flood damage prevention.

We have one new advance engineering and design project for flood control at Ottawa, Ohio, and we also will complete four advance engineering and design projects, all flood control shown here: East Grand Forks, Minnesota; Hannibal, Missouri; Sheyenne River, North Dakota; Twin Valley Lake, Wild Rice River, Minnesota.

I would like to highlight the status of a few of our major GI studies and projects.

## ILLINOIS RIVER, HENRY TO NAPLES, ILLINOIS

The Illinois River suffered a near record flood last spring with damages estimated at $11.5 million. As a result of the flood, 13 additional levee and drainage districts in the LaGrange pool and several communities in the Peoria pool were added to our study for flood damage prevention from Henry to Naples, Illinois. This expansion caused us to extend the reconnaissance phase, and we now plan to initiate the feasibility phase in Fiscal Year 1987.

## FOR WAYNE, INDIANA

At Fort Wayne, the St. Marys and the St. Joseph Rivers join to form the Maumee River. Fort Wayne has been damaged by floods from each river.

The second most severe flood, in March 1982, caused $35 million in damages. The survey report is scheduled to be completed with Fiscal Year 1987 funds.

## BUFFALO METROPOLITAN AREA, NEW YORK

The Buffalo metropolitan area suffers from flood damage in two separate areas, along Tonawanda Creek and along the tributaries of the Buffalo River.

Last February, in fact one year ago today, a flood caused $5 million in damages in the Tonawanda Creek Basin. The decline in commercial navigation traffic in the Buffalo River has led to a reduction in maintenance dredging in the Buffalo River.

The sediment accumulation will decrease the carrying capacity of the river which, in turn, will increase the chances for flooding.

### SOURIS RIVER BASIN, NORTH DAKOTA

In the Souris River Basin, the existing Minot flood control project plus the project for Lake Darling, Velva, and the Downstream Works, currently under construction, will provide 25-year protection.

The premier of the province of Saskatchewan has indicated he will construct two multiple purpose reservoirs subject to U.S. participation. Most of the flood control benefits would accrue to the United States. The Souris River Basin study is examining the feasibility of U.S. participation in these reservoirs.

### DULUTH-SUPERIOR HARBOR, MINNESOTA AND WISCONSIN

Duluth-Superior Harbor has served commercial navigation since the early 1870's. Today, the harbor is one of the major grain, coal, and iron ore shipping ports in the United States. Portions of the harbor need to be deepened to 27 feet and widened to permit better access. The general design memorandum is scheduled for completion in June 1989. The benefit to cost ratio for this project is 1.6 to 1.

### LITTLE CALUMET RIVER, INDIANA

The Little Calumet River project includes 22 miles of levees and floodwalls that will provide 200-year protection to parts of the Indiana communities of Hammond, Munster, Highland, Griffith, and Gary. The ratio of benefits to costs is 2.4 to 1. In Fiscal Year 1987 we plan to complete the continuation of planning and engineering phase of preconstruction planning.

### HANNIBAL, MISSOURI

Several major floods have caused significant damages to the downtown portion of Hannibal, Missouri. The reformulated project would provide protection to the most critical area. Included in this area is the historic Mark Twain District, which is on the National Register of Historic Places. The benefit to cost ratio is 1.6 to 1. Preconstruction planning is scheduled for completion in October 1987.

### SHEYENNE RIVER, NORTH DAKOTA

The recommended project for the Sheyenne River in North Dakota has three components: a five-foot raise of the flood pool at Baldhill Dam; levees and a diversion channel at West Fargo and Riverside; and a diversion channel from Horace to West Fargo.

This project has a benefit to cost ratio of 7.6 to 1 and will provide 100-year protection to about 2,000 homes and farms. We will complete preconstruction planning with the funds requested for Fiscal Year 1987.

### CONSTRUCTION GENERAL

In our construction general program, the Fiscal Year 1987 budget request includes 13 projects and two continuing major rehab projects. Fiscal Year 1987 funding will complete the construction of the flood control project at Bettendorf, Iowa. This project is currently 74 percent complete and is scheduled for completion in May 1987.

### NEW CONSTRUCTION STARTS

The North Central Division was very fortunate to have received approval on seven new construction projects as part of the Fiscal Year 1985 supplemental appropriations bill.

The seven projects are shown here: Bassett Creek, Minnesota; Cleveland Harbor, Ohio; Ellicott Creek, New York; Geneva-on-the-Lake, Ohio; Port Ontario Harbor, New York; Des Moines River Greenbelt, Iowa; Upper Mississippi River System Environmental Management Program.

The supplemental Fiscal Year 1985 projects are included as part of the continuing construction program in Fiscal Year 1987. For all these projects the local sponsors have agreed to cost sharing requirements consistent with concepts agreed to by the administration and the Senate majority leadership.

### BASSETT CREEK, MINNESOTA

The funds included for the Bassett Creek, Minnesota project will complete the reimbursement to the local sponsor for work already completed on the project. This project will provide flood damage protection for a large industrial and residential area in Minneapolis, Minnesota.

### CLEVELAND HARBOR, OHIO

The Cleveland Harbor Project, as authorized, will provide a much improved commercial navigation entrance approaching from the east for the main harbor area. The movement of bulk and general cargo will be much more efficient and economical with the new improvements. The east entrance will also provide a safer operation in view of the various obstacles in the harbor.

### ELLICOTT CREEK, NEW YORK

The local people are very anxious to start construction of the Ellicott Creek, New York project. The plan consists primarily of channelization and a diversion channel to protect residential areas and a large urban housing complex, along with the Amherst campus of the State University of New York at Buffalo.

### GENEVA-ON-THE-LAKE, OHIO

Funds in Fiscal Year 1987 for Geneva-on-the-Lake, Ohio project will continue the construction of the breakwaters and channels on this recreational navigation and harbor of refuge project.

## PORT ONTARIO HARBOR, NEW YORK

We will continue construction at Port Ontario Harbor, New York, with the funds requested in Fiscal Year 1987. The improvements will provide for safer small boat activities in the area.

## DES MOINES RECREATIONAL RIVER AND GREENBELT, IOWA

The funds requested for Des Moines Recreational River and Greenbelt, in Iowa, will complete the general design memorandum and the final environmental impact statement. This project will provide environmental protection and enhance opportunities for recreation in Central Iowa.

## UPPER MISSISSIPPI RIVER SYSTEM ENVIRONMENTAL MANAGEMENT PROGRAM

The Upper Mississippi River System Environmental Management Program is the initial implementation of the comprehensive master plan as submitted to Congress by the Upper Mississippi River Basin Commission in January 1982.

We completed a general plan for the environmental management program in December 1985. The Fiscal Year 1987 funds would be primarily used to continue early action construction projects along the upper Mississippi River.

## LAKE DARLING, SOURIS RIVER, NORTH DAKOTA

The funds requested for the Lake Darling, North Dakota project will complete the construction of the Velva Unit and initiate construction of the project for the Lake Darling unit from Burlington to Minot.

## MANKATO AND NORTH MANKATO, MINNESOTA

The Mankato and North Mankato project, in Minnesota, is progessing well. The project is now 69 percent complete as compared to 57 percent last year. In Fiscal Year 1987 we will complete the construction of the Main Street Bridge and initiate construction of the Highway 169 bridge.

## NEW CONSTRUCTION STARTS

Included in the budget request are two new construction starts, one at South Quincy, Illinois, which will provide flood protection for the area at a benefit cost ratio of 4.2 to 1, and the South Fork of the Zumbro River at Rochester, Minnesota. Both these areas have suffered major flooding in recent years. Both of these projects need authorization for construction in the next Water Resources Development Act.

## MAJOR REHABILITATIONS

Many of our navigation structures are over 50 years old and require major rehabilitation to assure their continued service. This budget year we have seven continuing major rehabs underway. Two involve breakwater structures on the Great Lakes at Duluth Ship Canal, Minnesota, and Milwaukee Harbor, Wisconsin.

Four are on the Illinois Waterway at Brandon Road, LaGrange, Peoria, and Marseilles Locks and Dam. The remaining one is Lock and Dam #20 on the Mississippi River. No closure of either waterway will be necessary for the rehabilitation work in Fiscal Year 1987.

### O&M PROGRAM

Our O&M programs for FY 1987 is shown on this slide.

The $43 million increase in Fiscal Year 1987 is primarily due to increase in the major rehabilitation and diked disposal programs.

As I indicated earlier, many of our navigation structures are deteriorating and in need of major rehabilitation. In addition to the seven continuing projects mentioned earlier, the major rehab program includes three new starts. These new starts provide for major repairs at eight lock and dam sites on the Mississippi River. All of these projects play an important role in our inland navigation system.

### DIKED DISPOSAL PROGRAM

There continues to be a need for confining contaminated dredged material in order to maintain navigation projects for our customers.

Two examples of diked disposal facilities currently being used are at Chicago, Illinois, and at Milwaukee, Wisconsin. The Fiscal Year 1987 budget request includes almost $20 million to initiate construction of two disposal facilities, continue construction of one, and complete one.

Other dredged material disposal needs are being undertaken in the regular O&M program. There will continue to be a shift in funding as initial requirements are fulfilled and subsequent needs arise.

The Fiscal Year 1987 program will provide sufficient funds to operate and maintain the Great Lakes and Upper Mississippi River navigation systems which serve the needs of commercial navigation and support the economic growth of the nation; operate and maintain flood control reservoirs; and administer the regulatory program in a timely manner. The request also provides for project inspections and condition surveys to ensure public health and safety.

The 2,900 men and women of the North Central Division are eager to serve the public, our customers, with our technical expertise, integrity, and professionalism. With our current workforce, we can undertake a multitude of engineering programs and produce quality products for our customers. We look forward to the challenges of Fiscal Year 1987.

Mr. Chairman and members of the committee, this concludes my status report, and I would be pleased to answer any questions you may have.

Thank you.

[The statement of General Pratt follows:]

# STATUS REPORT ON CIVIL WORKS ACTIVITIES IN THE NORTH CENTRAL DIVISION U.S. ARMY CORPS OF ENGINEERS BEFORE THE SUB-COMMITTEE ON ENERGY AND WATER DEVELOPMENT, COMMITTEE ON APPROPRIATIONS FOR THE FY 1987 BUDGET

REMARKS BY:
BRIGADIER GENERAL JOSEPH PRATT
DIVISION ENGINEER
NORTH CENTRAL DIVISION

HOUSE: 24 FEBRUARY 1986
SENATE:

MR. CHAIRMAN, AND MEMBERS OF THE COMMITTEE, I AM JOE PRATT, THE NEW DIVISION ENGINEER FOR NORTH CENTRAL DIVISION. I REPLACED GENERAL JERRY HILMES IN AUGUST 1985. IT IS MY PLEASURE TO APPEAR BEFORE YOUR COMMITTEE AND TO REPORT ON THE DIVISION STATUS. WITH ME IS BING CHIN, MY CHIEF OF PROGRAM DEVELOPMENT AND HIS ASSISTANT, RALPH MECKEL. ALSO WITH ME IS KEN MURDOCK, CHIEF, PLANNING DIVISION, AND ZANE GOODWIN, CHIEF, ENGINEERING DIVISION.

OUR AREA OF RESPONSIBILITY COVERS THE NORTH CENTRAL UNITED STATES, FROM NORTH DAKOTA TO THE ST. LAWRENCE RIVER, AND FROM CANADA TO WITHIN 50 MILES OF ST. LOUIS. THE DIVISION AREA COVERS 428,000 SQUARE MILES AND INCLUDES 20 PERCENT OF THE U.S. POPULATION, INCLUDING 95 CONGRESSIONAL DISTRICTS. WE HAVE FIVE DISTRICT OFFICES. THEY ARE LOCATED IN BUFFALO, NEW YORK; DETROIT, MICHIGAN; CHICAGO AND ROCK ISLAND, ILLINOIS; AND ST. PAUL, MINNESOTA.

THE NORTH CENTRAL DIVISION HAS A LARGE PORTION OF ITS ANNUAL BUDGET DEVOTED TO OPERATING, MAINTAINING, AND THE REHABILITATION OF EXISTING FACILITIES. THE DIVISION OPERATES AND MAINTAINS NAVIGATION IMPROVEMENTS AT 72 COMMERCIAL CHANNELS AND HARBORS, 42 COMMERCIAL LOCKS, AND APPROXIMATELY 900 MILES OF NAVIGABLE WATERWAYS ON THE MISSISSIPPI AND ILLINOIS RIVERS. IN ADDITION, WE OPERATE AND MAINTAIN 16 RESERVOIRS PRIMARILY FOR FLOOD CONTROL.

I WOULD LIKE TO PRESENT A SUMMARY OF OUR FISCAL YEAR 1987 BUDGET REQUEST AND REPORT SOME OF NCD'S ACCOMPLISHMENTS IN OUR CIVIL WORKS PROGRAM.

OUR FY 87 BUDGET REQUEST TOTALS ABOUT $267 MILLION AND IS SUMMARIZED ON THIS SLIDE. THIS REQUEST IS $53 MILLION MORE THAN THE FY 86 ALLOCATION, WITH THE INCREASE PRIMARILY IN OPERATION AND MAINTENANCE AND IN THE CONSTRUCTION PROGRAM. I WILL ADDRESS THE SPECIFICS LATER IN THE TESTIMONY.

BUDGET SUMMARY
NORTH CENTRAL DIVISION
($000)

| | FY 1986 ALLOCATION | FY 1987 REQUEST | INCREASE OR DECREASE |
|---|---|---|---|
| SURVEYS INCLUDING PHASE I STAGE OF AE&D | $ 4,202.0 | $ 5,951.0 | $+ 1,749.0 |
| CONTINUATION OF PLANNING AND ENGINEERING STUDIES | 1,890.0 | 1,393.0 | - 497.0 |
| ADVANCE ENGINEERING & DESIGN | 1,580.0 | 1,619.0 | + 39.0 |
| CONSTRUCTION | 23,267.0 | 32,578.0 | + 9,311.0 |
| MAJOR REHAB (CONTINUING) | 6,050.0 | 5,470.0 | - 580.0 |
| OPERATION AND MAINTENANCE | 177,000.0 | 220,112.0 | +43,112.0 |
| TOTAL | $213,989.0 | $267,123.0 | $+53,134.0 |

GENERAL INVESTIGATIONS

THE FY 1987 BUDGET REQUEST FOR GENERAL INVESTIGATIONS INCLUDES FUNDS FOR 18 SURVEYS, FIVE CONTINUATION OF PLANNING AND ENGINEERING STUDIES, AND FIVE ADVANCE ENGINEERING AND DESIGN PROJECTS. WE HAVE ONE NEW FLOOD DAMAGE PREVENTION STUDY ON THE MOOSE AND BLACK RIVERS, NEW YORK, AND THREE NEW CONTINUATION OF PLANNING AND ENGINEERING STUDIES: DULUTH-SUPERIOR HARBOR, MINNESOTA AND WISCONSIN, AND LORAIN HARBOR, OHIO, FOR COMMERCIAL NAVIGATION; AND ROOT RIVER AT HOUSTON, MINNESOTA, FOR FLOOD DAMAGE PREVENTION. IN FY 1987, WE WILL COMPLETE THE SIX STUDIES SHOWN HERE. THE FIRST FIVE ARE FEASIBILITY STUDIES AND INCLUDE ONE COMMERCIAL NAVIGATION STUDY, THREE FLOOD DAMAGE PREVENTION STUDIES, AND ONE SPECIAL STUDY. THE SIXTH IS A CONTINUATION OF PLANNING AND ENGINEERING STUDY FOR FLOOD DAMAGE PREVENTION.

ST. LAWRENCE SEAWAY ADDITIONAL LOCKS, NEW YORK
(NAVIGATION) (SURVEY)
FORT WAYNE METROPOLITAN AREA, INDIANA
(FLOOD DAMAGE PREVENTION) (SURVEY)
GREAT LAKES, PARTICULARLY LAKE ONTARIO AND LAKE ERIE,
MICHIGAN, ILLINOIS, INDIANA, MINNESOTA, NEW YORK, OHIO,
PENNSYLVANIA, AND WISCONSIN
(FLOOD DAMAGE PREVENTION) (SURVEY)
RED RIVER OF THE NORTH, NORTH DAKOTA AND MINNESOTA
(FLOOD DAMAGE PREVENTION) (SURVEY)
DIVERSION OF LAKE MICHIGAN WATER AT CHICAGO, ILLINOIS
(SPECIAL STUDY) (SURVEY)
LITTLE CALUMET RIVER, INDIANA
(FLOOD DAMAGE PREVENTION) ( CONTINUATION OF PLANNING
AND ENGINEERING)

WE HAVE ONE NEW ADVANCE ENGINEERING AND DESIGN PROJECT FOR FLOOD CONTROL AT OTTAWA, OHIO, AND WE ALSO WILL COMPLETE FOUR ADVANCE ENGINEERING AND DESIGN PROJECTS, ALL FLOOD CONTROL, SHOWN HERE.

EAST GRAND FORKS, MINNESOTA

HANNIBAL, MISSOURI

SHEYENNE RIVER, NORTH DAKOTA

TWIN VALLEY LAKE, WILD RICE RIVER, MINNESOTA

I WOULD LIKE TO HIGHLIGHT THE STATUS OF A FEW OF OUR MAJOR GI STUDIES AND PROJECTS.

### ILLINOIS RIVER, HENRY TO NAPLES, ILLINOIS

THE ILLINOIS RIVER SUFFERED A NEAR RECORD FLOOD LAST SPRING WITH DAMAGES ESTIMATED AT $11.5 MILLION. AS A RESULT OF THE FLOOD, 13 ADDITIONAL LEVEE AND DRAINAGE DISTRICTS IN THE LAGRANGE POOL AND SEVERAL COMMUNITIES IN THE PEORIA POOL WERE ADDED TO OUR STUDY FOR FLOOD DAMAGE PREVENTION FROM HENRY TO NAPLES, ILLINOIS. THIS EXPANSION CAUSED US TO EXTEND THE RECONNAISSANCE PHASE AND WE NOW PLAN TO INITIATE THE FEASIBILITY PHASE IN FY 1987.

### FORT WAYNE METROPOLITAN AREA, INDIANA

AT FORT WAYNE, THE ST. MARYS AND THE ST. JOSEPH RIVERS JOIN TO FORM THE MAUMEE RIVER. FORT WAYNE HAS BEEN DAMAGED BY FLOODS ON EACH RIVER. THE SECOND MOST SEVERE FLOOD, IN MARCH 1982, CAUSED $35 MILLION IN DAMAGES. THE SURVEY REPORT IS SCHEDULED TO BE COMPLETED WITH FY 1987 FUNDS.

### BUFFALO METROPOLITAN AREA, NEW YORK

THE BUFFALO METROPOLITAN AREA SUFFERS FROM FLOOD DAMAGES IN TWO SEPARATE AREAS, ALONG TONAWANDA CREEK AND ALONG THE TRIBUTARIES OF THE BUFFALO RIVER. LAST FEBRUARY, IN FACT ONE YEAR AGO TODAY, A FLOOD CAUSED $5 MILLION IN DAMAGES IN THE TONAWANDA CREEK BASIN. THE DECLINE IN COMMERCIAL NAVIGATION TRAFFIC HAS LED TO A REDUCTION IN MAINTENANCE DREDGING IN THE BUFFALO RIVER. THE SEDIMENT ACCUMULATION WILL DECREASE THE CARRYING CAPACITY OF THE RIVER WHICH, IN TURN, WILL INCREASE THE CHANCES FOR FLOODING.

### SOURIS RIVER BASIN, NORTH DAKOTA

IN THE SOURIS RIVER BASIN, THE EXISTING MINOT FLOOD CONTROL PROJECT PLUS THE PROJECT FOR LAKE DARLING, VELVA, AND THE DOWNSTREAM WORKS, CURRENTLY UNDER CONSTRUCTION, WILL PROVIDE 25-YEAR FLOOD PROTECTION. THE PROVINCE OF SASKATCHEWAN IS STUDYING THE FEASIBILITY OF TWO MULTIPLE PURPOSE RESERVOIRS THAT COULD INCLUDE FLOOD CONTROL STORAGE. MOST OF THE FLOOD CONTROL BENEFITS WOULD ACCRUE TO THE UNITED STATES. THE SOURIS RIVER BASIN STUDY IS EXAMINING THE FEASIBILITY OF U.S. PARTICIPATION IN THOSE RESERVOIRS.

### DULUTH-SUPERIOR HARBOR, MINNESOTA AND WISCONSIN

DULUTH-SUPERIOR HARBOR HAS SERVED COMMERCIAL NAVIGATION SINCE THE EARLY 1870's. TODAY, THE HARBOR IS ONE OF THE MAJOR GRAIN, COAL, AND IRON ORE SHIPPING PORTS IN THE UNITED STATES. PORTIONS OF THE HARBOR NEED TO BE DEEPENED TO 27 FEET AND WIDENED TO

PERMIT BETTER ACCESS. THE GENERAL DESIGN MEMORANDUM IS SCHEDULED FOR COMPLETION IN JUNE 1989. THE BENEFIT TO COST RATIO FOR THIS PROJECT IS 1.6 TO 1.

LITTLE CALUMET RIVER, INDIANA

THE LITTLE CALUMET RIVER PROJECT INCLUDES 22 MILES OF LEVEES AND FLOODWALLS THAT WILL PROVIDE 200-YEAR PROTECTION TO PARTS OF THE INDIANA COMMUNITIES OF HAMMOND, MUNSTER, HIGHLAND, GRIFFITH, AND GARY. THE RATIO OF BENEFITS TO COSTS IS 2.4 TO 1. IN FY 1987 WE PLAN TO COMPLETE THE CONTINUATION OF PLANNING AND ENGINEERING PHASE OF PRECONSTRUCTION PLANNING.

HANNIBAL, MISSOURI

SEVERAL MAJOR FLOODS HAVE CAUSED SIGNIFICANT DAMAGES TO THE DOWNTOWN PORTION OF HANNIBAL, MISSOURI. THE REFORMULATED PROJECT WOULD PROVIDE PROTECTION TO THE MOST CRITICAL AREA. INCLUDED IN THIS AREA IS THE HISTORIC MARK TWAIN DISTRICT, WHICH IS ON THE NATIONAL REGISTER OF HISTORIC PLACES. THE BENEFIT TO COST RATIO IS 1.6 TO 1. PRECONSTRUCTION PLANNING IS SCHEDULED FOR COMPLETION IN OCTOBER 1987.

SHEYENNE RIVER, NORTH DAKOTA

THE RECOMMENDED PROJECT FOR THE SHEYENNE RIVER IN NORTH DAKOTA HAS THREE COMPONENTS: A FIVE-FOOT RAISE OF THE FLOOD POOL AT BALDHILL DAM; LEVEES AND A DIVERSION CHANNEL AT WEST FARGO AND RIVERSIDE; AND A DIVERSION CHANNEL FROM HORACE TO WEST FARGO.

THIS PROJECT HAS A BENEFIT TO COST RATIO OF 7.6 TO 1 AND WILL PROVIDE 100-YEAR PROTECTION TO ABOUT 2,000 HOMES AND FARMS. WE WILL COMPLETE PRECONSTRUCTION PLANNING WITH THE FUNDS REQUESTED FOR FY 1987.

CONSTRUCTION GENERAL

IN OUR CONSTRUCTION GENERAL PROGRAM, THE FY 87 BUDGET REQUEST INCLUDES 13 PROJECTS AND TWO CONTINUING MAJOR REHAB PROJECTS. FY 87 FUNDING WILL COMPLETE THE CONSTRUCTION OF THE FLOOD CONTROL PROJECT AT BETTENDORF, IOWA. THIS PROJECT IS CURRENTLY 74 PERCENT COMPLETE AND IS SCHEDULED FOR COMPLETION IN MAY 1987.

I WOULD LIKE NOW TO BRIEFLY SHOW YOU THE STATUS OF SOME OF OUR CONTINUING CONSTRUCTION PROJECTS.

FIRST OF ALL, THE NORTH CENTRAL DIVISION WAS VERY FORTUNATE TO HAVE RECEIVED APPROVAL ON SEVEN (7) NEW CONSTRUCTION PROJECTS AS PART OF THE FY 1985 SUPPLEMENTAL APPROPRIATIONS BILL. THE SEVEN PROJECTS ARE SHOWN HERE:

BASSETT CREEK, MN
CLEVELAND HARBOR, OH
ELLICOTT CREEK, NY
GENEVA-ON-THE-LAKE, OH
PORT ONTARIO HARBOR, NY
DES MOINES RIVER-GREENBELT, IA
UPPER MISSISSIPPI RIVER SYSTEM ENVIRONMENTAL MANAGEMENT PROGRAM

THE SUPPLEMENTAL FY 85 PROJECTS ARE INCLUDED AS PART OF THE CONTINUING CONSTRUCTION PROGRAM IN FY 87. FOR ALL THESE PROJECTS THE LOCAL SPONSORS HAVE AGREED TO COST SHARING REQUIREMENTS CONSISTENT WITH CONCEPTS AGREED TO BY THE ADMINISTRATION AND THE SENATE MAJORITY LEADERSHIP.

BASSETT CREEK, MN

THE FUNDS INCLUDED FOR THE BASSETT CREEK, MINNESOTA PROJECT WILL COMPLETE THE REIMBURSEMENT TO THE LOCAL SPONSOR FOR WORK ALREADY COMPLETED ON THE PROJECT. THIS PROJECT WILL PROVIDE FLOOD DAMAGE PROTECTION FOR A LARGE INDUSTRIAL AND RESIDENTIAL AREA IN MINNEAPOLIS, MINNESOTA.

CLEVELAND HARBOR, OHIO

THE CLEVELAND HARBOR PROJECT, AS AUTHORIZED, WILL PROVIDE A MUCH IMPROVED COMMERCIAL NAVIGATION ENTRANCE APPROACHING FROM THE EAST FOR THE MAIN HARBOR AREA. THE MOVEMENT OF BULK AND GENERAL CARGO WILL BE MUCH MORE EFFICIENT AND ECONOMICAL WITH THE NEW IMPROVEMENTS. THE EAST ENTRANCE WILL ALSO PROVIDE A SAFER OPERATION IN VIEW OF THE VARIOUS OBSTACLES IN THE HARBOR.

ELLICOTT CREEK, NEW YORK

THE LOCAL PEOPLE ARE VERY ANXIOUS TO START CONSTRUCTION OF THE ELLICOTT CREEK, NEW YORK PROJECT. THE PLAN CONSISTS PRIMARILY OF CHANNELIZATION AND A DIVERSION CHANNEL TO PROTECT RESIDENTIAL AREAS AND A LARGE URBAN HOUSING COMPLEX, ALONG WITH THE AMHERST CAMPUS OF THE STATE UNIVERSITY OF NEW YORK AT BUFFALO.

GENEVA-ON-THE-LAKE, OHIO

FUNDS IN FY 1987 FOR GENEVA-ON-THE-LAKE, OHIO WILL CONTINUE THE CONSTRUCTION OF THE BREAKWATERS AND CHANNELS ON THIS RECREATIONAL NAVIGATION AND HARBOR OF REFUGE PROJECT.

PORT ONTARIO HARBOR, NEW YORK

WE WILL CONTINUE CONSTRUCTION AT PORT ONTARIO HARBOR, NEW YORK WITH THE FUNDS REQUESTED IN FY 87. THE IMPROVEMENTS WILL PROVIDE FOR SAFER SMALL-BOAT ACTIVITIES IN THE AREA.

DES MOINES RECREATIONAL RIVER AND GREENBELT, IOWA

THE FUNDS REQUESTED FOR DES MOINES RECREATIONAL RIVER AND GREENBELT, IN IOWA, WILL COMPLETE THE GENERAL DESIGN MEMORANDUM AND THE FINAL ENVIRONMENTAL IMPACT STATEMENT. THIS PROJECT WILL PROVIDE ENVIRONMENTAL PROTECTION AND ENHANCE OPPORTUNITIES FOR RECREATION IN CENTRAL IOWA.

UPPER MISSISSIPPI RIVER SYSTEM ENVIRONMENTAL MANAGEMENT PROGRAM

THE UPPER MISSISSIPPI RIVER SYSTEM ENVIRONMENTAL MANAGEMENT PROGRAM IS THE INITIAL IMPLEMENTATION OF THE COMPREHENSIVE MASTER PLAN AS SUBMITTED TO CONGRESS BY THE UPPER MISSISSIPPI RIVER BASIN COMMISSION, IN JANUARY 1982. WE COMPLETED A GENERAL PLAN FOR THE ENVIRONMENTAL MANAGEMENT PROGRAM IN DECEMBER 1985. THE FY 1987 FUNDS WOULD BE PRIMARILY USED TO CONTINUE EARLY ACTION CONSTRUCTION PROJECTS ALONG THE UPPER MISSISSIPPI RIVER.

LAKE DARLING, SOURIS RIVER, NORTH DAKOTA

THE FUNDS REQUESTED FOR THE LAKE DARLING, NORTH DAKOTA PROJECT WILL COMPLETE THE CONSTRUCTION OF THE VELVA UNIT AND INITIATE CONSTRUCTION OF THE PROJECT FOR THE LAKE DARLING UNIT FROM BURLINGTON TO MINOT.

MANKATO AND NORTH MANKATO, MINNESOTA

THE MANKATO AND NORTH MANKATO PROJECT, IN MINNESOTA, IS PROGRESSING WELL. THE PROJECT IS NOW 69 PERCENT COMPLETE AS COMPARED TO 57 PERCENT LAST YEAR. IN FY 87 WE WILL COMPLETE THE CONSTRUCTION OF THE MAIN STREET BRIDGE AND INITIATE CONSTRUCTION OF THE HIGHWAY 169 BRIDGE.

NEW CONSTRUCTION STARTS

INCLUDED IN THE BUDGET REQUEST ARE TWO NEW CONSTRUCTION STARTS. ONE AT SOUTH QUINCY, ILLINOIS, WHICH WILL PROVIDE FLOOD PROTECTION FOR THE AREA AT A BENEFIT COST RATIO OF 4.2 TO 1, AND THE SOUTH FORK OF THE ZUMBRO RIVER AT ROCHESTER, MINNESOTA. BOTH THESE AREAS HAVE SUFFERED MAJOR FLOODING IN RECENT YEARS AND THE LOCAL PEOPLE ARE LOOKING FORWARD TO OUR COMMENCEMENT OF CONSTRUCTION. BOTH OF THESE PROJECTS NEED AUTHORIZATION FOR CONSTRUCTION IN THE NEXT WATER RESOURCES DEVELOPMENT ACT.

MAJOR REHABILITATIONS

MANY OF OUR NAVIGATION STRUCTURES ARE OVER 50 YEARS OLD AND REQUIRE MAJOR REHABILITATION TO ASSURE THEIR CONTINUED SERVICE. THIS BUDGET YEAR WE HAVE SEVEN CONTINUING MAJOR REHABS UNDERWAY. TWO INVOLVE BREAKWATER STRUCTURES ON THE GREAT LAKES AT DULUTH SHIP CANAL, MINNESOTA, AND MILWAUKEE HARBOR, WISCONSIN. FOUR ARE ON THE ILLINOIS WATERWAY AT BRANDON ROAD, LAGRANGE, PEORIA, AND MARSEILLES LOCKS AND DAMS. THE REMAINING ONE IS LOCK AND DAM #20 ON THE MISSISSIPPI RIVER. NO CLOSURE OF EITHER WATERWAY WILL BE NECESSARY FOR THE REHABILITATION WORK IN FY 1987.

OUR FY 87 O&M PROGRAM SUMMARY IS SHOWN HERE.

OPERATION AND MAINTENANCE
($000)

|  | FY 1986 ALLOCATIONS | FY 1987 REQUEST | INCREASE OR DECREASE |
|---|---|---|---|
| 1. NAVIGATION |  |  |  |
| A. CHANNELS & HARBORS |  |  |  |
| (1) CHANNELS & HARBORS REGULAR | $ 69,879.0 | $ 77,744.0 | $+ 7,865.0 |
| (2) DIKED DISPOSAL | 1,892.0 | 19,770.0 | +17,878.0 |
| B. LOCKS, DAMS & CANALS | 72,854.0 | 90,682.0 | +17,828.0 |
| TOTAL NAVIGATION | 144,625.0 | 188,196.0 | +43,571.0 |
| 2. FLOOD CONTROL | 14,301.0 | 14,145.0 | - 156.0 |
| 3. MULTIPLE PURPOSE PROJECTS INCLUDING POWER | 10,474.0 | 10,070.0 | - 404.0 |
| 4. PROTECTION OF NAVIGATION | 7,600.0 | 7,701.0 | + 101.0 |
| TOTAL | $177,000.0 | $220,112.0 | $+43,112.0 |

THE $43 MILLION INCREASE IN FY 87 IS PRIMARILY DUE TO INCREASES IN THE MAJOR REHABILITATION AND DIKED DISPOSAL PROGRAMS.

## MAJOR REHABILITATION PROGRAM INCREASE

AS I INDICATED EARLIER, MANY OF OUR NAVIGATION STRUCTURES ARE DETERIORATING AND IN NEED OF MAJOR REHABILITATION. IN ADDITION TO THE SEVEN CONTINUING PROJECTS MENTIONED EARLIER, THE MAJOR REHAB PROGRAM INCLUDES THREE NEW STARTS. THESE NEW STARTS PROVIDE FOR MAJOR REPAIRS AT EIGHT LOCK AND DAM SITES ON THE MISSISSIPPI RIVER (L&D #21, 22 and L&D #3, 5A, 6-9). ALL OF THESE PROJECTS PLAY AN IMPORTANT ROLE IN OUR INLAND NAVIGATION SYSTEM.

## DIKED DISPOSAL PROGRAM INCREASE

THERE CONTINUES TO BE A NEED FOR CONFINING CONTAMINATED DREDGED MATERIAL IN ORDER TO MAINTAIN NAVIGATION PROJECTS FOR OUR CUSTOMERS. TWO EXAMPLES OF DIKED DISPOSAL FACILITIES CURRENTLY BEING USED ARE AT CHICAGO, ILLINOIS AND AT MILWAUKEE, WISCONSIN. THE FY 87 BUDGET REQUEST INCLUDES ALMOST $20 MILLION TO INITIATE CONSTRUCTION OF TWO DISPOSAL FACILITIES (CLINTON AND SAGINAW RIVERS, MI), CONTINUE CONSTRUCTION OF ONE (GREEN BAY, WI), AND COMPLETE ONE (KEWEENAW WATERWAY, MI). OTHER DREDGED MATERIAL DISPOSAL NEEDS ARE BEING UNDERTAKEN IN THE REGULAR O&M PROGRAM. THERE WILL CONTINUE TO BE A SHIFT IN FUNDING AS INITIAL REQUIREMENTS ARE FULFILLED AND SUBSEQUENT NEEDS ARISE.

THE FY 87 O&M PROGRAM WILL PROVIDE SUFFICIENT FUNDS TO OPERATE AND MAINTAIN THE GREAT LAKES AND UPPER MISSISSIPPI RIVER NAVIGATION SYSTEMS WHICH SERVE THE NEEDS OF COMMERCIAL NAVIGATION AND SUPPORT THE ECONOMIC GROWTH OF THE NATION; OPERATE

AND MAINTAIN FLOOD CONTROL RESERVOIRS; AND ADMINISTER THE REGULATORY PROGRAM IN A TIMELY MANNER. THE REQUEST ALSO PROVIDES FOR PROJECT INSPECTIONS AND CONDITION SURVEYS TO ENSURE PUBLIC HEALTH AND SAFETY.

## CONCLUSION

THE 2,900 MEN AND WOMEN OF THE NORTH CENTRAL DIVISION ARE EAGER TO SERVICE THE PUBLIC, OUR CUSTOMERS, WITH OUR TECHNICAL EXPERTISE, INTEGRITY, AND PROFESSIONALISM. WITH OUR CURRENT WORKFORCE, WE CAN UNDERTAKE A MULTITUDE OF ENGINEERING PROGRAMS AND PRODUCE QUALITY PRODUCTS FOR OUR CUSTOMERS. WE LOOK FORWARD TO THE CHALLENGES OF FISCAL YEAR 1987.

MR. CHAIRMAN AND MEMBERS OF THE COMMITTEE, THIS CONCLUDES MY STATUS REPORT AND I WOULD BE PLEASED TO ANSWER ANY QUESTIONS YOU MAY HAVE.

THANK YOU.

# STATUS REPORT ON CIVIL WORKS ACTIVITIES IN THE NORTH CENTRAL DIVISION U.S. ARMY CORPS OF ENGINEERS BEFORE THE SUB-COMMITTEE ON ENERGY AND WATER DEVELOPMENT, COMMITTEE ON APPROPRIATIONS FOR THE FY 1987 BUDGET

REMARKS BY:
BRIGADIER GENERAL JOSEPH PRATT
DIVISION ENGINEER
NORTH CENTRAL DIVISION

HOUSE: 24 FEBRUARY 1986
SENATE:

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BUDGET SUMMARY
NORTH CENTRAL DIVISION
($000)

| | FY 1986 ALLOCATION | FY 1987 REQUEST | INCREASE OR DECREASE |
|---|---|---|---|
| SURVEYS INCLUDING PHASE I STAGE OF AE&D | $ 4,202.0 | $ 5,951.0 | $+ 1,749.0 |
| CONTINUATION OF PLANNING AND ENGINEERING STUDIES | 1,890.0 | 1,393.0 | - 497.0 |
| ADVANCE ENGINEERING & DESIGN | 1,580.0 | 1,619.0 | + 39.0 |
| CONSTRUCTION | 23,267.0 | 32,578.0 | + 9,311.0 |
| MAJOR REHAB (CONTINUING) | 6,050.0 | 5,470.0 | - 580.0 |
| OPERATION AND MAINTENANCE | 177,000.0 | 220,112.0 | +43,112.0 |
| TOTAL | $213,989.0 | $267,123.0 | $+53,134.0 |

GENERAL INVESTIGATIONS

THE FY 1987 BUDGET REQUEST FOR GENERAL INVESTIGATIONS INCLUDES FUNDS FOR 18 SURVEYS, FIVE CONTINUATION OF PLANNING AND ENGINEERING STUDIES, AND FIVE ADVANCE ENGINEERING AND DESIGN PROJECTS. WE HAVE ONE NEW FLOOD DAMAGE PREVENTION STUDY ON THE MOOSE AND BLACK RIVERS, NEW YORK, AND THREE NEW CONTINUATION OF PLANNING AND ENGINEERING STUDIES: DULUTH-SUPERIOR HARBOR, MINNESOTA AND WISCONSIN, AND LORAIN HARBOR, OHIO, FOR COMMERCIAL NAVIGATION; AND ROOT RIVER AT HOUSTON, MINNESOTA, FOR FLOOD DAMAGE PREVENTION. IN FY 1987, WE WILL COMPLETE THE SIX STUDIES SHOWN HERE. THE FIRST FIVE ARE FEASIBILITY STUDIES AND INCLUDE ONE COMMERCIAL NAVIGATION STUDY, THREE FLOOD DAMAGE PREVENTION STUDIES, AND ONE SPECIAL STUDY. THE SIXTH IS A CONTINUATION OF PLANNING AND ENGINEERING STUDY FOR FLOOD DAMAGE PREVENTION.

ST. LAWRENCE SEAWAY ADDITIONAL LOCKS, NEW YORK
(NAVIGATION) (SURVEY)
FORT WAYNE METROPOLITAN AREA, INDIANA
(FLOOD DAMAGE PREVENTION) (SURVEY)
GREAT LAKES, PARTICULARLY LAKE ONTARIO AND LAKE ERIE, MICHIGAN, ILLINOIS, INDIANA, MINNESOTA, NEW YORK, OHIO, PENNSYLVANIA, AND WISCONSIN
(FLOOD DAMAGE PREVENTION) (SURVEY)
RED RIVER OF THE NORTH, NORTH DAKOTA AND MINNESOTA
(FLOOD DAMAGE PREVENTION) (SURVEY)
DIVERSION OF LAKE MICHIGAN WATER AT CHICAGO, ILLINOIS
(SPECIAL STUDY) (SURVEY)
LITTLE CALUMET RIVER, INDIANA
(FLOOD DAMAGE PREVENTION) ( CONTINUATION OF PLANNING AND ENGINEERING)

WE HAVE ONE NEW ADVANCE ENGINEERING AND DESIGN PROJECT FOR FLOOD CONTROL AT OTTAWA, OHIO, AND WE ALSO WILL COMPLETE FOUR ADVANCE ENGINEERING AND DESIGN PROJECTS, ALL FLOOD CONTROL, SHOWN HERE.

EAST GRAND FORKS, MINNESOTA
HANNIBAL, MISSOURI
SHEYENNE RIVER, NORTH DAKOTA
TWIN VALLEY LAKE, WILD RICE RIVER, MINNESOTA

I WOULD LIKE TO HIGHLIGHT THE STATUS OF A FEW OF OUR MAJOR GI STUDIES AND PROJECTS.

ILLINOIS RIVER, HENRY TO NAPLES, ILLINOIS

THE ILLINOIS RIVER SUFFERED A NEAR RECORD FLOOD LAST SPRING WITH DAMAGES ESTIMATED AT $11.5 MILLION. AS A RESULT OF THE FLOOD, 13 ADDITIONAL LEVEE AND DRAINAGE DISTRICTS IN THE LAGRANGE POOL AND SEVERAL COMMUNITIES IN THE PEORIA POOL WERE ADDED TO OUR STUDY FOR FLOOD DAMAGE PREVENTION FROM HENRY TO NAPLES, ILLINOIS. THIS EXPANSION CAUSED US TO EXTEND THE RECONNAISSANCE PHASE AND WE NOW PLAN TO INITIATE THE FEASIBILITY PHASE IN FY 1987.

FORT WAYNE METROPOLITAN AREA, INDIANA

AT FORT WAYNE, THE ST. MARYS AND THE ST. JOSEPH RIVERS JOIN TO FORM THE MAUMEE RIVER. FORT WAYNE HAS BEEN DAMAGED BY FLOODS ON EACH RIVER. THE SECOND MOST SEVERE FLOOD, IN MARCH 1982, CAUSED $35 MILLION IN DAMAGES. THE SURVEY REPORT IS SCHEDULED TO BE COMPLETED WITH FY 1987 FUNDS.

BUFFALO METROPOLITAN AREA, NEW YORK

THE BUFFALO METROPOLITAN AREA SUFFERS FROM FLOOD DAMAGES IN TWO SEPARATE AREAS, ALONG TONAWANDA CREEK AND ALONG THE TRIBUTARIES OF THE BUFFALO RIVER. LAST FEBRUARY, IN FACT ONE YEAR AGO TODAY, A FLOOD CAUSED $5 MILLION IN DAMAGES IN THE TONAWANDA CREEK BASIN. THE DECLINE IN COMMERCIAL NAVIGATION TRAFFIC HAS LED TO A REDUCTION IN MAINTENANCE DREDGING IN THE BUFFALO RIVER. THE SEDIMENT ACCUMULATION WILL DECREASE THE CARRYING CAPACITY OF THE RIVER WHICH, IN TURN, WILL INCREASE THE CHANCES FOR FLOODING.

SOURIS RIVER BASIN, NORTH DAKOTA

IN THE SOURIS RIVER BASIN, THE EXISTING MINOT FLOOD CONTROL PROJECT PLUS THE PROJECT FOR LAKE DARLING, VELVA, AND THE DOWNSTREAM WORKS, CURRENTLY UNDER CONSTRUCTION, WILL PROVIDE 25-YEAR FLOOD PROTECTION. THE PROVINCE OF SASKATCHEWAN IS STUDYING THE FEASIBILITY OF TWO MULTIPLE PURPOSE RESERVOIRS THAT COULD INCLUDE FLOOD CONTROL STORAGE. MOST OF THE FLOOD CONTROL BENEFITS WOULD ACCRUE TO THE UNITED STATES. THE SOURIS RIVER BASIN STUDY IS EXAMINING THE FEASIBILITY OF U.S. PARTICIPATION IN THESE RESERVOIRS.

DULUTH-SUPERIOR HARBOR, MINNESOTA AND WISCONSIN

DULUTH-SUPERIOR HARBOR HAS SERVED COMMERCIAL NAVIGATION SINCE THE EARLY 1870's. TODAY, THE HARBOR IS ONE OF THE MAJOR GRAIN, COAL, AND IRON ORE SHIPPING PORTS IN THE UNITED STATES. PORTIONS OF THE HARBOR NEED TO BE DEEPENED TO 27 FEET AND WIDENED TO

PERMIT BETTER ACCESS. THE GENERAL DESIGN MEMORANDUM IS SCHEDULED FOR COMPLETION IN JUNE 1988. THE BENEFIT TO COST RATIO FOR THIS PROJECT IS 1.6 TO 1.

LITTLE CALUMET RIVER, INDIANA

THE LITTLE CALUMET RIVER PROJECT INCLUDES 22 MILES OF LEVEES AND FLOODWALLS THAT WILL PROVIDE 200-YEAR PROTECTION TO PARTS OF THE INDIANA COMMUNITIES OF HAMMOND, MUNSTER, HIGHLAND, GRIFFITH, AND GARY. THE RATIO OF BENEFITS TO COSTS IS 2.4 TO 1. IN FY 1987 WE PLAN TO COMPLETE THE CONTINUATION OF PLANNING AND ENGINEERING PHASE OF PRECONSTRUCTION PLANNING.

HANNIBAL, MISSOURI

SEVERAL MAJOR FLOODS HAVE CAUSED SIGNIFICANT DAMAGES TO THE DOWNTOWN PORTION OF HANNIBAL, MISSOURI. THE AUTHORIZED PROJECT WOULD PROVIDE PROTECTION TO THE MOST CRITICAL AREA. INCLUDED IN THIS AREA IS THE HISTORIC MARK TWAIN DISTRICT, WHICH IS ON THE NATIONAL REGISTER OF HISTORIC PLACES. THE BENEFIT TO COST RATIO IS 1.4 TO 1. PRECONSTRUCTION PLANNING IS SCHEDULED FOR COMPLETION IN OCTOBER 1987.

SHEYENNE RIVER, NORTH DAKOTA

THE RECOMMENDED PROJECT FOR THE SHEYENNE RIVER IN NORTH DAKOTA HAS THREE COMPONENTS: A FIVE-FOOT RAISE OF THE FLOOD POOL OF BALDHILL DAM; LEVEES AND A DIVERSION CHANNEL AT WEST FARGO AND RIVERSIDE; AND A DIVERSION CHANNEL FROM HORACE TO WEST FARGO.

THIS PROJECT HAS A BENEFIT TO COST RATIO OF 7.6 TO 1 AND WILL PROVIDE 100-YEAR PROTECTION TO ABOUT 2,000 HOMES AND FARMS. WE WILL COMPLETE PRECONSTRUCTION PLANNING WITH THE FUNDS REQUESTED FOR FY 1987.

CONSTRUCTION GENERAL

IN OUR CONSTRUCTION GENERAL PROGRAM, THE FY 87 BUDGET REQUEST INCLUDES 13 PROJECTS AND TWO CONTINUING MAJOR REHAB PROJECTS. FY 87 FUNDING WILL COMPLETE THE CONSTRUCTION OF THE FLOOD CONTROL PROJECT AT BETTENDORF, IOWA. THIS PROJECT IS CURRENTLY 74 PERCENT COMPLETE AND IS SCHEDULED FOR COMPLETION IN MAY 1987.

I WOULD LIKE NOW TO BRIEFLY SHOW YOU THE STATUS OF SOME OF OUR CONTINUING CONSTRUCTION PROJECTS.

FIRST OF ALL, THE NORTH CENTRAL DIVISION WAS VERY FORTUNATE TO HAVE RECEIVED APPROVAL ON SEVEN (7) NEW CONSTRUCTION PROJECTS AS PART OF THE FY 1985 SUPPLEMENTAL APPROPRIATIONS BILL. THE SEVEN PROJECTS ARE SHOWN HERE:

BASSETT CREEK, MN
CLEVELAND HARBOR, OH
ELLICOTT CREEK, NY
GENEVA-ON-THE-LAKE, OH
PORT ONTARIO HARBOR, NY
DES MOINES RIVER-GREENBELT, IA
UPPER MISSISSIPPI RIVER SYSTEM ENVIRONMENTAL MANAGEMENT
PROGRAM

### GENEVA-ON-THE-LAKE, OHIO

FUNDS IN FY 1987 FOR GENEVA-ON-THE-LAKE, OHIO WILL CONTINUE THE CONSTRUCTION OF THE BREAKWATERS AND CHANNELS ON THIS RECREATIONAL NAVIGATION AND HARBOR OF REFUGE PROJECT.

### PORT ONTARIO HARBOR, NEW YORK

WE WILL CONTINUE CONSTRUCTION AT PORT ONTARIO HARBOR, NEW YORK WITH THE FUNDS REQUESTED IN FY 87. THE IMPROVEMENTS WILL PROVIDE FOR SAFER SMALL-BOAT ACTIVITIES IN THE AREA.

### DES MOINES RECREATIONAL RIVER AND GREENBELT, IOWA

THE FUNDS REQUESTED FOR DES MOINES RECREATIONAL RIVER AND GREENBELT, IN IOWA, WILL COMPLETE THE GENERAL DESIGN MEMORANDUM AND THE FINAL ENVIRONMENTAL IMPACT STATEMENT. THIS PROJECT WILL PROVIDE ENVIRONMENTAL PROTECTION AND ENHANCE OPPORTUNITIES FOR RECREATION IN CENTRAL IOWA.

### UPPER MISSISSIPPI RIVER SYSTEM ENVIRONMENTAL MANAGEMENT PROGRAM

THE UPPER MISSISSIPPI RIVER SYSTEM ENVIRONMENTAL MANAGEMENT PROGRAM IS THE INITIAL IMPLEMENTATION OF THE COMPREHENSIVE MASTER PLAN AS SUBMITTED TO CONGRESS BY THE UPPER MISSISSIPPI RIVER BASIN COMMISSION, IN JANUARY 1982. WE COMPLETED A GENERAL PLAN FOR THE ENVIRONMENTAL MANAGEMENT PROGRAM IN DECEMBER 1985. THE FY 1987 FUNDS WOULD BE PRIMARILY USED TO CONTINUE EARLY ACTION CONSTRUCTION PROJECTS ALONG THE UPPER MISSISSIPPI RIVER.

LAKE DARLING, SOURIS RIVER, NORTH DAKOTA

THE FUNDS REQUESTED FOR THE LAKE DARLING, NORTH DAKOTA PROJECT WILL COMPLETE THE CONSTRUCTION OF THE VELVA UNIT AND INITIATE CONSTRUCTION OF THE PROJECT FOR THE LAKE DARLING UNIT FROM BURLINGTON TO MINOT.

MANKATO AND NORTH MANKATO, MINNESOTA

THE MANKATO AND NORTH MANKATO PROJECT, IN MINNESOTA, IS PROGRESSING WELL. THE PROJECT IS NOW 69 PERCENT COMPLETE AS COMPARED TO 57 PERCENT LAST YEAR. IN FY 87 WE WILL COMPLETE THE CONSTRUCTION OF THE MAIN STREET BRIDGE AND INITIATE CONSTRUCTION OF THE HIGHWAY 169 BRIDGE.

NEW CONSTRUCTION STARTS

INCLUDED IN THE BUDGET REQUEST ARE TWO NEW CONSTRUCTION STARTS. ONE AT SOUTH QUINCY, ILLINOIS, WHICH WILL PROVIDE FLOOD PROTECTION FOR THE AREA AT A BENEFIT COST RATIO OF 4.2 TO 1, AND THE SOUTH FORK OF THE ZUMBRO RIVER AT ROCHESTER, MINNESOTA. BOTH THESE AREAS HAVE SUFFERED MAJOR FLOODING IN RECENT YEARS AND THE LOCAL PEOPLE ARE LOOKING FORWARD TO OUR COMMENCEMENT OF CONSTRUCTION. BOTH OF THESE PROJECTS NEED AUTHORIZATION FOR CONSTRUCTION IN THE NEXT WATER RESOURCES DEVELOPMENT ACT.

## MAJOR REHABILITATIONS

MANY OF OUR NAVIGATION STRUCTURES ARE OVER 50 YEARS OLD AND REQUIRE MAJOR REHABILITATION TO ASSURE THEIR CONTINUED SERVICE. THIS BUDGET YEAR WE HAVE SEVEN CONTINUING MAJOR REHABS UNDERWAY. TWO INVOLVE BREAKWATER STRUCTURES ON THE GREAT LAKES AT DULUTH SHIP CANAL, MINNESOTA, AND MILWAUKEE HARBOR, WISCONSIN. FOUR ARE ON THE ILLINOIS WATERWAY AT BRANDON ROAD, LAGRANGE, PEORIA, AND MARSEILLES LOCKS AND DAMS. THE REMAINING ONE IS LOCK AND DAM #20 ON THE MISSISSIPPI RIVER. NO CLOSURE OF EITHER WATERWAY WILL BE NECESSARY FOR THE REHABILITATION WORK IN FY 1987.

OUR FY 87 O&M PROGRAM SUMMARY IS SHOWN HERE.

OPERATION AND MAINTENANCE
($000)

| | FY 1986 ALLOCATIONS | FY 1987 REQUEST | INCREASE OR DECREASE |
|---|---|---|---|
| 1. NAVIGATION | | | |
| A. CHANNELS & HARBORS | | | |
| (1) CHANNELS & HARBORS REGULAR | $ 69,879.0 | $ 77,744.0 | $+ 7,865.0 |
| (2) DIKED DISPOSAL | 1,892.0 | 19,770.0 | +17,878.0 |
| B. LOCKS, DAMS & CANALS | 72,854.0 | 90,682.0 | +17,828.0 |
| TOTAL NAVIGATION | 144,625.0 | 188,196.0 | +43,571.0 |
| 2. FLOOD CONTROL | 14,301.0 | 14,145.0 | - 156.0 |
| 3. MULTIPLE PURPOSE PROJECTS INCLUDING POWER | 10,474.0 | 10,070.0 | - 404.0 |
| 4. PROTECTION OF NAVIGATION | 7,600.0 | 7,701.0 | + 101.0 |
| TOTAL | $177,000.0 | $220,112.0 | $+43,112.0 |

THE $43 MILLION INCREASE IN FY 87 IS PRIMARILY DUE TO INCREASES IN THE MAJOR REHABILITATION AND DIKED DISPOSAL PROGRAMS.

MAJOR REHABILITATION PROGRAM INCREASE

AS I INDICATED EARLIER, MANY OF OUR NAVIGATION STRUCTURES ARE DETERIORATING AND IN NEED OF MAJOR REHABILITATION. IN ADDITION TO THE SEVEN CONTINUING PROJECTS MENTIONED EARLIER, THE MAJOR REHAB PROGRAM INCLUDES THREE NEW STARTS. THESE NEW STARTS PROVIDE FOR MAJOR REPAIRS AT EIGHT LOCK AND DAM SITES ON THE MISSISSIPPI RIVER (L&D #21, 22 and L&D #3, 5A, 6-9). ALL OF THESE PROJECTS PLAY AN IMPORTANT ROLE IN OUR INLAND NAVIGATION SYSTEM.

DIKED DISPOSAL PROGRAM INCREASE

THERE CONTINUES TO BE A NEED FOR CONFINING CONTAMINATED DREDGED MATERIAL IN ORDER TO MAINTAIN NAVIGATION PROJECTS FOR OUR CUSTOMERS. TWO EXAMPLES OF DIKED DISPOSAL FACILITIES CURRENTLY BEING USED ARE AT CHICAGO, ILLINOIS AND AT MILWAUKEE, WISCONSIN. THE FY 87 BUDGET REQUEST INCLUDES ALMOST $20 MILLION TO INITIATE CONSTRUCTION OF TWO DISPOSAL FACILITIES (CLINTON AND SAGINAW RIVERS, MI), CONTINUE CONSTRUCTION OF ONE (GREEN BAY, WI), AND COMPLETE ONE (KEWEENAW WATERWAY, MI). OTHER DREDGED MATERIAL DISPOSAL NEEDS ARE BEING UNDERTAKEN IN THE REGULAR O&M PROGRAM. THERE WILL CONTINUE TO BE A SHIFT IN FUNDING AS INITIAL REQUIREMENTS ARE FULFILLED AND SUBSEQUENT NEEDS ARISE.

THE FY 87 O&M PROGRAM WILL PROVIDE SUFFICIENT FUNDS TO OPERATE AND MAINTAIN THE GREAT LAKES AND UPPER MISSISSIPPI RIVER NAVIGATION SYSTEMS WHICH SERVE THE NEEDS OF COMMERCIAL NAVIGATION AND SUPPORT THE ECONOMIC GROWTH OF THE NATION; OPERATE

AND MAINTAIN FLOOD CONTROL RESERVOIRS; AND ADMINISTER THE REGULATORY PROGRAM IN A TIMELY MANNER. THE REQUEST ALSO PROVIDES FOR PROJECT INSPECTIONS AND CONDITION SURVEYS TO ENSURE PUBLIC HEALTH AND SAFETY.

## CONCLUSION

THE 2,900 MEN AND WOMEN OF THE NORTH CENTRAL DIVISION ARE EAGER TO SERVICE THE PUBLIC, OUR CUSTOMERS, WITH OUR TECHNICAL EXPERTISE, INTEGRITY, AND PROFESSIONALISM. WITH OUR CURRENT WORKFORCE, WE CAN UNDERTAKE A MULTITUDE OF ENGINEERING PROGRAMS AND PRODUCE QUALITY PRODUCTS FOR OUR CUSTOMERS. WE LOOK FORWARD TO THE CHALLENGES OF FISCAL YEAR 1987.

MR. CHAIRMAN AND MEMBERS OF THE COMMITTEE, THIS CONCLUDES MY STATUS REPORT AND I WOULD BE PLEASED TO ANSWER ANY QUESTIONS YOU MAY HAVE.

THANK YOU.

## BRIGADIER GENERAL JOSEPH PRATT
### Commander and Division Engineer
### North Central Division

Brigadier General Joseph Pratt assumed command of the North Central Division, U. S. Army Corps of Engineers, on August 19, 1985. He succeeds Brigadier General Jerome B. Hilmes who was reassigned as the Commander, U. S. Army Engineer Division, Southwestern in Dallas Texas. General Pratt's previous assignment was as the Chief of Staff of the U. S. Army Training Center-Engineer, Ft. Leonard Wood, Missouri.

As Commander of the North Central Division, General Pratt will direct civil activities in a 428,000 square-mile area that includes the Great Lakes and Upper Mississippi River Basins. The Division encompasses all or parts of 12 states and has district offices in Buffalo, New York; Detroit, Michigan; St. Paul, Minnesota; and Chicago and Rock Island, Illinois.

General Pratt will also supervise Corps activities related to agreements between the United States and Canada on the regulation of boundary waters, by serving on three advisory boards to the International Joint Commission.

A native of Bolton Landing, New York, General Pratt's civilian education includes a bachelor of chemical engineering degree from Clarkson College (1960), a bachelor of science in civil engineering from the University of Missouri-Rolla (1965), and a master's degree in system science from Michigan State University (1971). He is a graduate of the Armed Forces Staff College and the Industrial College of the Armed Forces.

General Pratt's previous military assignments include service as an engineer troop commander and staff officer with the 1st Cavalry Division in Korea; the 70th Engineer Battalion at Ft. Campbell, Kentucky; the 169th Engineer Battalion, Ft. Stewart, Georgia; and the 293rd Engineer Battalion in Germany.

He served with the 168th Engineer Battalion and the 79th Engineer Group in the Republic of Vietnam, and as Plans Officer, Deputy Chief of Staff for Operations, USARV. He has commanded the 39th Engineer Battalion, Ft. Devens, Massachusetts; the 1st Training Support Brigade and 4th Training Brigade, Ft. Leonard Wood, Missouri. He has also served as Deputy Senior Advisor to the Ohio National Guard.

General Pratt is married to the former Joan Dein. They have two sons and a daughter. His father, Alton A. Pratt, resides in Bolton Landing.

Mr. BEVILL. Thank you. We will insert the justification material for the North Central Division in the record at this point, without objection.

[The justifications follow:]

Justification of Estimates for Civil Functions Activities
Department of the Army, Corps of Engineers
Fiscal Year 1987

## SUMMARY NORTH CENTRAL DIVISION

| | FY 1986 Allocation | FY 1987 Request | Increase or Decrease |
|---|---|---|---|
| General Investigations | | | |
| Surveys Including Phase I Stage of AE&D | 4,202,000 | 5,951,000 | 1,749,000 |
| Continuation of Planning and Engineering | 1,890,000 | 1,393,000 | -497,000 |
| Advance Engineering and Design | 1,580,000 | 1,619,000 | 39,000 |
| Construction, General | | | |
| Continuation of Engineering and Design | 0 | 0 | 0 |
| Construction | 23,267,000 | 32,578,000 | 9,311,000 |
| Major Rehabilitation (Continuing) and Dam Safety Assurance | 6,050,000 | 5,470,000 | -580,000 |
| Operation and Maintenance, General | | | |
| Project Operation and Maintenance | 159,800,000 | 182,612,000 | 22,812,000 |
| Major Rehabilitation | 17,200,000 | 37,500,000 | 20,300,000 |
| TOTAL | 213,989,000 1/ | 267,123,000 | 53,134,000 |

1/ Does not reflect reductions required by the Balanced Budget and Emergency Deficit Control Act of 1985. (Public Law 99-177)

APPROPRIATION TITLE: General Investigations, Fiscal Year 1987 NORTH CENTRAL DIVISION

| Study | Region | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|---|
| | | $ | $ | $ | $ | $ |

1. SURVEYS - NEW

a. Navigation Studies: None

b. Flood Damage Prevention Studies: The amount of $340,000 is requested in Fiscal Year 1987 to initiate and complete the reconnaissance phase for one flood damage prevention study.

NEW YORK

| Study | Region | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|---|
| Moose & Black Rivers, NY | GL | 340,000 | 0 | 0 | 340,000 | 0 |

The Black River Basin, located in north-central New York State, has a total drainage area of 1,916 square miles. Floods in the basin occur primarily in the spring causing urban damages in several scattered communities, and agricultural damages in the highly productive Carthage Flats area. Flooding is usually caused by thawing temperatures in combination with rainfall on snow-covered or partially frozen ground. The flood of record, 28 December 1984 through 2 January 1985, resulted in the area being designated a Federal Disaster Area. The study will consider needs for flood control, streambank erosion, hydropower, water supply (M&I and irrigation), navigation and other water-related purposes. The Hudson River - Black River Regulating District informally indicated they would consider 50-50 cost sharing of the feasibility phase, based on a favorable outcome of the reconnaissance phase. The FY 87 allocation is to initiate and complete the reconnaissance phase of the study. The reconnaissance phase of the study is scheduled for completion in March 1988.

c. Shoreline Protection Studies: None

d. Special Studies: None

e. Comprehensive Studies: None

f. Project Review Studies: None

| Study | Region | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|---|
| TOTAL SURVEYS - NEW | | 340,000 | 0 | 0 | 340,000 | 0 |

| Study | Region | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|---|
| | | $ | $ | $ | $ | $ |

2. SURVEYS - CONTINUED
a. Navigation Studies: The amount of [illegible] is requested in Fiscal Year 1987 to complete the study.

NEW YORK

| St. Lawrence Seaway Additional Locks, NY | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | 0 |
|---|---|---|---|---|---|---|

This study is considering [illegible]

| Subtotal Navigation Studies - Continuing | [illegible] | [illegible] | [illegible] | [illegible] | 0 |
|---|---|---|---|---|---|

| Study | Region | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|---|
| | | $ | $ | $ | $ | $ |

b. Flood Damage Prevention Studies: The amount of $3,916,000 is requested in Fiscal Year 1987 to complete three studies and to continue nine studies.

ILLINOIS

| Study | Region | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|---|
| Chicago-South End of Lake Michigan, IL & IN | GL&UM | 4,901,000 | 3,670,000 | 120,000 | 300,000 | 811,000 |

The study area, located in northeastern Illinois and northwestern Indiana, includes portions of the watersheds of the Illinois River and Lake Michigan. The 1980 population in the study area was about 7,900,000 and is projected to reach 9,000,000 by 1990 and 11,000,000 by 2020. The most significant water problems are flooding, pollution, and poor drainage. Major floods in 1954 and 1972 each caused damages in excess of $10,000,000. Local interests wish the study to include an evaluation of the relationships among the various problems impacting upon the south end of Lake Michigan and the Illinois River system. Analyses of the problems in the study area are being made via interim studies. Completed studies include: a comprehensive analysis of wastewater management for the Chicago Metropolitan area; a study of the flood problems and the related water quality control needs in the 352-square mile combined sewer area under the jurisdiction of the Metropolitan Sanitary District of Greater Chicago; a study of the Des Plaines River; and a study of the Du Page River sub-basin. Work on three additional problem areas remain. These areas are the Illinois and Michigan Canal, the Lake Michigan Drainage, and the Grand Calumet River. In FY 1986, funds are being used to complete the Illinois and Michigan Canal Interim and to resume reconnaissance studies for the final report. In FY 1987, the reconnaissance phase will be completed and work on the final feasibility phase for the Lake Michigan Drainage and the Grand Calumet River will be started. The Federal study cost estimate decreased $6,000, from $4,907,000 to $4,901,000, due to a decrease in Supervision and Administration costs, $26,000, partially offset by salary increases, $20,000. The study report of the Division Commander, on the Lake Michigan Drainage and Grand Calumet River, is scheduled for completion in October 1988. An Interim report for the Illinois and Michigan Canal is scheduled for completion in July 1986.

| Study | Region | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|---|
| | | $ | $ | $ | $ | $ |
| ILLINOIS | | | | | | |
| Illinois River Henry to Naples, IL | UM | 1,630,000 | 375,000 | 410,000 | 330,000 | 515,000 |

The study is to determine the advisability of improvements for flood control and allied purposes along 130 miles of the Illinois River between Henry and Naples, Illinois. The Peoria and LaGrange locks and dams are located in the study area. In March 1985, a near record flood occured on the Illinois River. About $11.5 million in damages were caused by this flood. After the flood, thirteen drainage and levee districts in the LaGrange pool and several local communities in the Peoria Lake requested to be included in the study. Because of the large expansion of the study, the Reconnaissance phase will be accomplished in two parts, one for Peoria Lake and the other for the LaGrange pool. The study will also address the sedimentation problem associated with Peoria Lake. Fiscal Year 1986 funds are being used to complete both parts of the Reconnaissance Phase. The funds requested for Fiscal Year 1987 will be used to initiate the feasibility phase of the study for Peoria Lake. The estimated cost of the feasibility phase is $1,690,000, which is to be shared on a 50-50 basis by Federal and non-Federal interests. A summary of study cost sharing is as follows:

| | |
|---|---|
| Total Estimated Study Cost | $2,475,000 |
| Reconnaissance Phase (Federal) | 785,000 |
| Feasibility Phase (Federal) | 845,000 |
| Feasibility Phase (Non-Federal) | 845,000 |

The Tri-County Regional Planning Commission is coordinating local input to the Reconnaissance phase. The local sponsor(s) of the feasibility phase will be identified during the reconnaissance phase. The parts of the reconnaissance phase are scheduled for completion in August 1986 for Peoria Lake and in June 1987 for the LaGrange pool. The study report of the Division Commander is scheduled for completion in September 1989.

| Study | Region | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|---|
| | | $ | $ | $ | $ | $ |
| INDIANA | | | | | | |
| Fort Wayne Metropolitan Area | GL | 936,000 | 430,000 | 385,000 | 121,000 | 0 |

The study area is located in Allen County, Indiana. The St. Marys and St. Joseph Rivers join at Fort Wayne to form the Maumee River. The principal problem, flooding, involves the three major rivers, and an extensive interior drainage system. Six notable floods occurred in this area during the 73-year period for which stream-flow records are available. The flood of record in March 1913 inundated about 5,000 acres in the city. Prior to 1972, when floodplain regulations were enacted, Fort Wayne experienced a high rate of urbanized development in the floodplain. Flooding in March 1982 resulted in damages of $35,000,000 despite massive flood-fighting efforts. The March 1982 flood, the second most severe of record, approached the 1913 flood stage and vividly demonstrated the need for action to reduce flood damages at Fort Wayne. Support for a study to determine a feasible solution is widespread. Fiscal Year 1986 funds are being used to continue work on the feasibility phase of the study. The funds requested for Fiscal Year 1987 will be used to complete the feasibility phase. The estimated cost of the feasibility phase is $1,032,000 which is to be shared by Federal and non-Federal interests. The effective date for implementation of cost sharing is 15 March 1986. A summary of study cost sharing is as follows:

| | |
|---|---|
| Total Estimated Study Cost | $1,112,000 |
| Reconnaissance Phase (Federal) | 80,000 |
| Feasibility Phase (Federal) | 856,000 |
| Feasibility Phase (Non-Federal) | 176,000 |

The local sponsor is the Fort Wayne Conservancy District. The reconnaissance phase was completed in June 1984. The study report of the Division Commander is scheduled for completion in May 1987.

| Study | Region | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|---|
| | | $ | $ | $ | $ | $ |
| MICHIGAN | | | | | | |
| Great Lakes, Particularly Lake Ontario and Lake Erie MI, IL, IN, MN, NY, OH, PA & WI | GL | 9,865,000 | 9,415,000 | 320,000 | 130,000 | 0 |

Efforts in this study are focused on flood problems in the highly urbanized southeast Michigan area. Prior studies under this authority include: the hydropower potential of the St. Mary's River flow; comprehensive analyses of wastewater management for the Cleveland-Akron, Ohio, and the Detroit, Michigan, metropolitan areas; and an Urban Study of Water Supply for Duluth, Minnesota, and Superior, Wisconsin. In addition, a plan related to erosion control, land enhancement, and economic development in the City of Detroit and continuing into Wayne County was undertaken. All of these reports are complete or terminated. To address the serious flood damage problem in the southeast Michigan area caused by high lake stages along the low shoreline areas of the St. Clair River, Lake St. Clair, the Detroit River, and Lake Erie, five studies were initiated. Reports recommending Federal action were completed for Downriver Wayne County and Monroe County. The St. Clair County study was terminated due to lack of economic justification and the Detroit Waterfront and the Upper Wayne County and Macomb County Studies were terminated due to lack of local interest. Flood damages were reported in the rapidly urbanizing watersheds on the upper Clinton River area and along Ecorse Creek. The investigation of the Clinton River Basin was terminated due to a lack of an economically justified Federal plan. The Ecorse Creek Drainage Basin is a high density urban area with an urgent need to solve severe flood problems. A flood in July 1979 caused damages of $21,000,000 and flooded over 10,000 homes in two communities. Substantial local interest exists in solving the area's water hazard problems. Letters of support were received from the cities of Romulus, Dearborn Heights, and Taylor, as well as the Wayne County Drain Commissioner, Wayne County Executive, and Michigan Department of Natural Resources. In FY 1986, the Feasibility Report on Ecorse Creek will be completed and work will continue on the Summary Report. In FY 1987, twelve completed or terminated studies under this study authority will be reviewed and a summary document prepared. The Summary Report of the Division Commander is scheduled for completion in August 1987. The Interim Report for Ecorse Creek is scheduled for September 1986.

| Study | Region | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|---|
|  |  | $ | $ | $ | $ | $ |
| MICHIGAN |  |  |  |  |  |  |
| Saginaw River | GL | 3,800,000 | 1,027,000 | 218,000 | 900,000 | 1,655,000 |

The Saginaw River Basin drains 6,260 square miles in east-central Michigan and flows into Saginaw Bay, Lake Huron, at Bay City. The major tributaries, Tittabawassee, Shiawassee, Flint, and Cass Rivers, converge to form the Saginaw River. The principal urban areas in the twenty-one county basin are Saginaw, Bay City, Flint, Midland, Mt. Pleasant, and Owosso. Due to expanding development, serious flood problems are increasing in most urban communities in the basin. Flood protection in agricultural areas is also urgently needed. In August 1985, the flood of record, estimated as a 100-year event, occurred along the Flint River. Estimated damages were $24 million in Genesee County and $11 million in Saginaw County. In FY 1982, Congress directed the Corps to develop a computer model to predict flood damages in the basin under various land development scenarios. The computer model, completed in June 1985, was necessary due to the complex hydrologic and hydraulic relationships of the basin. The model, compatible with local planning efforts, includes concern for water quality, water supply, and allied purposes. In FY 1986, the model will analyze identified problem areas to develop and evaluate flood control alternatives in terms of economic, environmental, and hydraulic consideration. Training of non-Federal users will also be accomplished. The Reconnaissance phase will be completed in September 1986. The feasibility phase will be initiated in FY 1987. The study report of the Division Commander is scheduled for completion in June 1989.

| Study | Region | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|---|
| | | $ | $ | $ | $ | $ |
| **MINNESOTA** | | | | | | |
| Minnesota River Valley, MN | UM | 6,750,000 | 4,528,000 | 450,000 | 350,000 | 1,422,000 |

The Minnesota River starts at Big Stone Lake, Minnesota, flows southeast to Mankato, Minnesota, then north and northwest to the Mississippi River at St. Paul, Minnesota. Over one-half million people live in the basin. In 1965, a flood, exceeding the previous record flood by up to 6 feet in some areas, caused urban and agricultural damages estimated at $43 million. The April 1969 flood exceeded the 1965 flood upstream of Mankato, Minnesota. Damages sustained from this flood were $33.4 million, however, about $43.4 million in damages were prevented through emergency measures. Agricultural flooding along with minor urban flood damages has occurred in 1951, 1952, 1957, 1963, 1965, and 1969 in the Yellow Bank, Lac qui Parle, Yellow Medicine, Redwood and Cottonwood subbasins of the Minnesota River. Flat topography in the lower reaches of these tributaries allows flood flows to move overland across sub-basins in a general easterly direction. A joint Corps-Soil Conservation Service water and land related resource study for the five subbasins was authorized in 1975 by the Senate Committee on Public Works and the House Committee on Public Works and Transportation under the Provisions of PL 87-639. In its Comprehensive Basin Report, completed in 1977, the Soil Conservation Service identified 206 potential reservoirs and recommended 81 sites along with several miles of channel improvement for further study. The joint study plan identified 18 reservoir sites to be studied by the Corps and 63 to be studied by the SCS. An Alternatives Study, approved in November 1980, evaluated all 81 reservoir sites in the five subbasins and 121 miles of potential channel improvements on two of the rivers, the Lac qui Parle and Yellow Medicine. The study found that 28 reservoirs and 56 miles of channel improvement should be studied in more detail. The study recommended the Corps investigate the six largest reservoirs and all of the channel improvements and the SCS study the remaining 22 smaller reservoirs. As studies progressed, it was determined that many of the structural measures, that would help solve the overall inter-basin cross-over flooding problems, were not economically feasible under today's criteria. However, there are several smaller independent measures that could reduce flood damages in localized areas. The FY 1986 funds are being used to complete water quality studies and continue the hydrologic-hydraulic-economic modeling and development of flood management measures for the Yellow Medicine, Redwood, and Cottonwood basins. In FY 1987, work on the hydrologic-hydraulic-economic model and development of flood management measures will continue. The study report of the Division Commander on the Yellow Medicine, Redwood, and Cottonwood subbasins and overall 639 summary report is scheduled for completion in June 1989.

| Study | Region | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|---|
| | | $ | $ | $ | $ | $ |
| NEW YORK | | | | | | |
| Buffalo Metropolitan Area (Buffalo River and Tonawanda Creek) | GL | 2,743,000 | 1,843,000 | 0 | 300,000 | 600,000 |

The study area includes the Buffalo River and Tonawanda Creek. The Buffalo River is just eight miles long, but with its tributaries it drains 446 square miles. The lower 5.8 miles of Buffalo River has been maintained for commercial traffic to an authorized depth of 22.0 feet below low water datum. Commercial traffic on the Buffalo River is decreasing and this will lead to a reduction in channel maintenance. Within 10 years, shoaling would decrease the depth of the navigation channel to 15 feet which would have an adverse impact on flood levels on the river and the tributaries. The degree of protection for free flow conditions in the lower river would decrease from a 100-year flood to a 10-year flood and from a 10-year flood to a two-year flood in the upper river. During periods of ice jamming, the degree of protection along the lower river would decrease from the 25-year flood to the two-year flood and along the upper river from the five-year flood to the one year flood. Average annual damages due to flooding could be in excess of $1.0 million. The main purpose of the Buffalo River study is to define the amount and extent of this impact and to develop alternative plans to prevent or reduce the potential damages. Tonawanda Creek is an L-shaped basin that drains 648 square miles. The study will investigate measures to reduce flood damages in the lower reaches of the creek. Alternatives will include plans developed for the lower Tonawanda Creek in previous studies. The FY 87 allocation will be used to continue flood damage reduction studies. The study report of the Division Commander is scheduled for completion in September 1990.

| Study | Region | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|---|
| | | $ | $ | $ | $ | $ |
| NEW YORK | | | | | | |
| Cattaraugus Creek | GL | 505,000 | 134,000 | 180,000 | 100,000 | 91,000 |

Cattaraugus Creek drains 554 square miles and enters Lake Erie approximately 25 miles southwest of Buffalo, New York. The creek forms the boundary between Cattaraugus and Erie counties. Parts of Allegany and Wyoming counties are also in the basin. The basin is predominately rural, however, the main branch of the creek passes through the villages of Arcade, Gowanda, and Springville. Local interests are concerned about flood damage reduction and bank erosion along the creek and its tributaries. In the late 1960's, preliminary studies were made of local protection at Gowanda and three multipurpose reservoir sites in the Cattaraugus Creek Basin. The FY 1986 allocation is being used to complete the reconnaissance phase and begin the feasibility phase. The FY 1987 allocation will be used to continue the feasibility study. The study report of the Division Commander is scheduled for completion in January 1988.

| Study | Region | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|---|
| | | $ | $ | $ | $ | $ |
| NORTH DAKOTA | | | | | | |
| Red River of the North, ND & MN | SRR | 8,790,000 | 7,760,000 | 560,000 | 470,000 | 0 |

The Red River of the North, a northward flowing stream, forms the boundary between Minnesota and North Dakota, crosses the international boundary, and passes through Winnipeg, Manitoba, and discharges into Hudson Bay. The Red River of the North Basin drains about 40,000 square miles in the United States. This study considers flood protection for urban and agricultural areas and future basin needs for water supply, recreation and other related water resource purposes. The 1980 population in the basin is estimated at 595,000 with about 66 percent classified as rural. The large metropolitan centers in the basin and their populations are Grand Forks, North Dakota-East Grand Forks, Minnesota, 53,000 and Fargo, North Dakota-Moorhead, Minnesota, 91,000. Recurrence of the flood discharges of 1950, 1969, 1975, and 1979 would cause estimated damages of $197, $145, $581, and $154 million respectively (based on October 1985 price levels). The 1975 damages include crop losses due to slow drainage as well as overbank flooding. The 1979 flood inundated nearly 1.4 million acres of prime agricultral land and portions of 48 communities. Ten interim studies have been completed since the basin study was initiated in 1949. In the Devils Lake subbasin, the flooding potential has increased significantly in recent years because of the steady rise in the Devils Lake water levels. Public, commercial, residential, transportation, and agricultural damages could exceed $100 million at Devils Lake in the near future. Closely associated with this flood potential are water quality and fish and wildlife concerns. Based on the preliminary results of the Basin-wide reconnaissance study, an analysis of farmstead ring levees to reduce rural flood damages was initiated in FY 1982 as part of the basin study. In FY 1986, funds are being used to complete work on the farmstead flood protection study and to continue the feasibility study on the Devils Lake basin. In FY 1987, funds will be used to complete the investigation of the problems in the Devils Lake Subbasin and to complete an overall basin report. The study report of the Division Commander is scheduled for completion in September 1987.

| Study | Region | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|---|
| | | $ | $ | $ | $ | $ |
| NORTH DAKOTA | | | | | | |
| Souris River Basin, ND | SRR | 1,580,000 | 340,000 | 100,000 | 600,000 | 540,000 |

The Souris River basin is in southeastern Saskatchewan and southwestern Manitoba, Canada, and in northwestern North Dakota within the United States. The basin covers about 24,800 square miles, of which 15,480 square miles, or 62.4 percent, are in Canada and 9,320 square miles, or 37.6 percent, are in the United States. The largest population center in the United States portion of the Souris Valley is Minot, North Dakota with a population of 32,000. Over 11,000 people live in the floodplain. The basin study will evaluate flood control alternatives at Minot and upstream in the United States and Canada and determine basin-wide benefits and impacts. Close coordination will be maintained with Canadian and North Dakota interests. Local interests, particularly residents of Minot, are eager to obtain additional relief from the threat of flooding. The Lake Darling project, together with the Minot local protection project, provides a 25-year degree of flood protection. Preliminary studies indicate that 100-year flood protection at Minot could be achieved through the use of storage in two proposed multiple purpose dams in Saskatchewan, Canada, the Rafferty Dam on the Souris River near Estevan and the Alameda Dam on Moose Mountain Creek near Alameda. These reservoirs would provide flood storage in Canada in lieu of authorized flood control storage in the United States. This alternative would be subject to Congressional and Presidential approval and is dependent upon the Premier's decision to construct and provide the U. S. flood Storage at the sites. Fiscal Year 1985 funds were used to initiate the reconnaissance phase at full Federal expense. The reconnaissance phase will be completed in FY 1986. The funds requested for Fiscal Year 1987 will be used to initiate the feasibility phase of the study, upon agreement by the local sponsor to share 50 percent of the costs of this phase. The estimated cost of the feasibility phase is $2,280,000. A summary of study cost sharing is as follows:

| | |
|---|---|
| Total Estimated Study Cost | $2,720,000 |
| Reconnaissance Phase (Federal) | 440,000 |
| Feasibility Phase (Federal) | 1,140,000 |
| Feasibility Phase (Non-Federal) | 1,140,000 |

The reconnaissance phase is scheduled for completion in September 1986. The study report of the Division Commander is scheduled for completion in June 1989.

| Study | Region | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|---|
|  |  | $ | $ | $ | $ | $ |
| OHIO |  |  |  |  |  |  |
| Sandusky River, OH | GL | 965,000 | 263,000 | 0 | 125,000 | 577,000 |

The Sandusky River, in Northern Ohio, has a total length of 140 miles and drains 1,421 square miles. The river rises in Richland County, flows westerly about 50 miles to its junction with the Little Sandusky River near Upper Sandusky, then flows northerly about 90 miles to enter the western end of Sandusky Bay, an arm of Lake Erie. Principal cities along the river are Fremont, Tiffin, Upper Sandusky, and Bucyrus. The 1980 population in these cities was 17,834, 19,549, 5,967, and 13,433, respectively. All four cities have problems with flooding, water supply, and water quality. A Corps report completed, in April 1962, recommended projects for local flood protection at Fremont and Bucyrus, Ohio. The Fremont project was authorized by the 1962 Flood Control Act and construction was completed in December 1972. Local interests requested further study of an identified multi-purpose reservoir above Bucyrus. The FY 87 allocation will be used to continue the feasibility study. The study report of the Division Commander is scheduled for completion in September 1989.

| Study | Region | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|---|
| | | $ | $ | $ | $ | $ |
| OHIO | | | | | | |
| Vermilion River, OH | GL | 470,000 | 0 | 180,000 | 190,000 | 100,000 |

The Vermilion River drains 272 square miles in North-central Ohio and flows in a northerly direction for a distance of 59 miles from its source to Lake Erie in the city of Vermilion. The principal flood damage area is in the city of Vermilion with minor flooding at New London. Floods occur most often in the late winter or early spring and are caused by thawing temperatures in combination with rainfall on snow covered or partially frozen ground. River stages are frequently affected by ice jams, especially at the mouth when the river is covered by sheet ice. Significant flooding due to ice jams occurred in February and March 1984. At least 200 homes were evacuated and several businesses were heavily damaged by these floods. The mayor requested Federal assistance to help reduce or eliminate this problem. The flood of record, in July 1969, was caused by a high intensity storm accompanied by severe thunderstorms. The FY 86 allocation is being used to fully fund the reconnaissance phase at full Federal expense. The FY 87 allocation will be used to initiate the feasibility phase of the study. The estimated cost of the feasibility phase, $580,000, is to be shared on a 50-50 basis by Federal and non-Federal interests. A summary of study cost sharing is as follows:

| | |
|---|---|
| Total Estimated Study Cost | $760,000 |
| Reconnaissance Phase | 180,000 |
| Feasibility Phase (Federal) | 290,000 |
| Feasibility Phase (non-Federal) | 290,000 |

The local sponsor, the city of Vermilion, has informally indicated their will willingness to cost-share the feasibility phase of the study. The reconnaissance phase is scheduled for completion in December 1986. The study report of the Division Commander is scheduled for completion in September 1988.

| Study | Region | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|---|
| Subtotal Flood Damage Prevention Studies-Continuing | | 42,935,000 | 29,785,000 | 2,923,000 | 3,916,000 | 6,311,000 |

| Study | Region | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|---|
| | | $ | $ | $ | $ | $ |

b. Shoreline Protection Studies: The amount of $1,015,000 is requested in Fiscal Year 1987 to continue two studies.

ILLINOIS

| | | | | | | |
|---|---|---|---|---|---|---|
| Illinois Shoreline Erosion | GL | 1,608,000 | 432,000 | 200,000 | 415,000 | 561,000 |

The study area includes the entire Illinois shoreline of Lake Michigan, a distance of 65 miles. Shoreline erosion is a continuing problem along much of the Illinois shoreline, particularly during the last ten years since Lake Michigan water levels have remained consistently above their long-term average level. The objective of this study is to determine feasible measures to reduce erosion damages in the study area. The study is being conducted in a series of four separate studies, three interims and a final. The scope of each study coincides with the principal physiographic reaches along the Illinois shoreline or with specific problem areas of particular importance to the local interests. The study reaches are: Interim 1 - Illinois-Wisconsin State line to Waukegan Harbor; Interim 2 - Casino Beach (Jackson Park, Chicago); Interim 3 - Wilmette Harbor to Illinois-Indiana State line; and the Final Report - Waukegan Harbor to Wilmette Harbor. Interim 1 has been completed and a report summarizing the findings was provided to local interests for their use. Interim 2, recommending reconstruction of the Casino Beach jetty, at a cost of $5.3 million, is also complete. The reconnaissance phases for Interim 3 and the Final Report have been started. Since last year the study cost estimate has decreased $37,000 due to the elimination of further study of Interim One, $62,000, partially offset by salary increases, $25,000. The FY 1986 funds are being used to complete the reconnaissance phases for Interim 3 and the Final Report and begin work on the Interim 3 feasibility phase. The FY 1987 funds will be used to continue work on the feasibility phase for Interim 3 and initiate the feasibility phase for the Final Report. The Final Study Report of the Division Commander is scheduled to be completed in November 1989. The Interim 3 report is scheduled for completion in November 1988.

| Study | Region | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|---|
| | | $ | $ | $ | $ | $ |
| NEW YORK | | | | | | |
| Lake Ontario - St. Lawrence River Shoreline Protection Study | GL | 4,180,000 | 1,015,000 | 0 | 600,000 | 2,565,000 |

The study area includes the U.S. shorelines of Lake Ontario and the St. Lawrence River from the mouth of the Niagara River on Lake Ontario to near Massena, New York, where the international boundary departs from the St. Lawrence River. The river includes the Thousand Islands area, an important recreation and wildlife habitat area, and Lake St. Lawrence, the man-made impoundment behind the Moses-Saunders Powerdam and Long Sault Spillway Dam. This international river section is under joint navigation control of the St. Lawrence Seaway Development Corporation, a corporate agency of the United States, and the St. Lawrence Seaway Authority of Canada. The levels of the St. Lawrence River and Lake Ontario are affected by the regulation of the Lake Ontario outflow at the aforementioned dams. This regulation is conducted according to the regulation plan administered by the International St. Lawrence Board of Control, acting under the authority of the International Joint Commission. The purposes of the study are to: investigate means of relief from loss of lakefront property due to high lake levels and shoreline erosion; identify measures to prevent flooding and erosion damage of properties along the St. Lawrence River; and, as specifically directed by the study's authorizing language, identify cost-sharing alternatives for protection of private property. The FY 87 allocation will be used to continue the Feasibility Study. The study report of the Division Commander is scheduled for completion in June 1991.

| | | | | | | |
|---|---|---|---|---|---|---|
| Subtotal Shoreline Protection Studies - Continuing | | 5,788,000 | 1,447,000 | 200,000 | 1,015,000 | 3,126,000 |

| Study | Region | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|---|
| | | $ | $ | $ | $ | $ |

d. Special Studies: The amount of $230,000 is requested in Fiscal Year 1987 to complete one study.

ILLINOIS

| | | | | | | |
|---|---|---|---|---|---|---|
| Diversion of Lake Michigan Water at Chicago | GL&UM | 1,981,000 | 1,751,000 | 0 | 230,000 | 0 |

Section 166 of the Water Resources Development Act authorized a study and demonstration program to determine if increasing the Lake Michigan diversion at Chicago, Illinois would alleviate shoreland damage in the Great Lakes due to high lake levels and improve the water quality of the Illinois Waterway. The program is to be developed by the Chief of Engineers, in cooperation with the State of Illinois and the Metropolitan Sanitary District of Greater Chicago (MSDGC), will be implemented by the State of Illinois and MSDGC under the supervision of the Chief of Engineers. The study will investigate and assess the adverse or beneficial impacts resulting from incrementally increasing the average annual diversion rate at Chicago from the present limit of 3,200 cubic feet per second up to 10,000 cubic feet per second. No increased diversion will be allowed when the river stage of the the Illinois Waterway approaches or is predicted to approach the flood warning stage, when the level of Lake Michigan is below its long-term average, or when increased diversion would adversely affect water levels necessary for navigational requirements of the Saint Lawrence Seaway. An Information Report, completed in July 1981, concluded that large diversion increases are not justified, however, smaller increases may be feasible. In FY 1987, a final report with recommendations for Federal action will be prepared and coordinated with local interests. The cost estimate increase of $97,000 from $1,884,000 to $1,981,000 is due to increased report preparation and public participation cost, $15,000, the October 1980 through 1985 salary increases, $45,000 and increases in administrative costs, $37,000. The Final Report of the Division Commander is scheduled for completion in November 1987.

| | | | | | | |
|---|---|---|---|---|---|---|
| Subtotal Special Studies - Continuing | | 1,981,000 | 1,751,000 | 0 | 230,000 | 0 |

| Study | Region | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|---|
| | | $ | $ | $ | $ | $ |

e. Comprehensive Studies: The amount of $250,000 is requested in Fiscal Year 1987 to continue one study.

NEW YORK & PENNSYLVANIA

| | | | | | | |
|---|---|---|---|---|---|---|
| Genesee River Basin (Authorization Report) | GL | 855,000 | 285,000 | 200,000 | 250,000 | 120,000 |

The Genesee River Basin, in the eastern portion of the Great Lakes Region, is located in western New York and northwestern Pennsylvania. The basin includes parts of Allegany, Cattaraugus, Genesee, Livingston, Monroe, Ontario, Orleans, Steuben, and Wyoming Counties in New York and Potter County, Pennsylvania. The upper reaches of the Genesee River and its tributaries are typically steep and rugged with stream gradients up to 40 feet per mile. The lower reaches are broad, flat, alluvial valleys, and include some of the richest agricultural areas in the State. Spring floods delay the planting season, while summer floods cause extensive damage to growing crops. One of the most significant flood problems is along Canaseraga Creek. Damaging floods affecting agricultural areas and small communities occur about once every three years. Other water resource problems and needs to be studied include: hydropower development at Mt. Morris Reservoir; development of the Stannard Reservoir site; flood damage reduction plans on Canaseraga Creek upstream of Dansville; streambank erosion; and water supply. The FY 1986 allocation will be used to complete the Reconnaissance phase and begin the Feasibility phase. The FY 1987 allocation will be used to continue the Feasibility phase. The study report of the Division Commander is scheduled for completion in August 1988.

| | | | | | | |
|---|---|---|---|---|---|---|
| Subtotal Comprehensive Studies - Continuing | | 855,000 | 285,000 | 200,000 | 250,000 | 120,000 |
| TOTAL SURVEYS - CONTINUING | | 55,568,000 | 36,702,000 | 3,698,000 | 5,611,000 | 9,557,000 |

| Planning and Engineering Study | Region | Total Estimated Federal Cost | Allocation Prior to [illegible] | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|---|
| | | $ | | $ | $ | $ |

3. SURVEYS - CONTINUATION OF PLANNING AND ENGINEERING STUDIES

a. Navigation Studies: The amount of $380,000 is requested in Fiscal Year 1987 to initiate two studies.

MINNESOTA

| | | | | | | |
|---|---|---|---|---|---|---|
| Duluth-Superior Harbor, MN & WI | GL | 575,000 1/ | 0 | 0 | 180,000 | 395,000 |

Duluth-Superior Harbor, located at the southwestern tip of Lake Superior, is within the Cities of Duluth, Minnesota, and Superior, Wisconsin. The recommended commercial navigation project in the harbor involves deepening to 27 feet approximately 4.0 miles of navigation channels (North, South, Upper and Minnesota Channels), widening the channel turning basin to 1,500 feet, widening the bend at Arrowhead Bridge to 600 feet, and disposing the dredged material in the 130 acre Superior Forest upland confinded disposal site. Consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, local interests will be required to provide lands, easements, rights-of-way, and required disposal areas, presently estimated at $2,930,000; modify or relocate buildings, utilities, roads, and other facilities, except railroad bridges, where necessary in the construction of the project, presently estimated at $620,000; pay 25 percent of the costs allocated to deep draft navigation during construction, presently estimated at $2,240,000; and pay an additional 10 percent of the costs allocated to deep draft navigation within a period of 30 years following completion if not offset by credit allowed by the Secretary of the Army. The Final Feasibility Report recommending project authorization is currently under review by the Office of Management and Budget. In Fiscal Year 1987, a General Design Memorandum will be initiated. The first work will reconfirm project economics and environmental feasibility. The General Design Memorandum is scheduled for completion in June 1989.

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1/ Preconstruction estimate, excluding plans and specifications.

| Planning and Engineering Study | Region | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|---|
|  |  | $ | $ | $ | $ | $ |
| OHIO |  |  |  |  |  |  |
| Lorain Harbor, OH | GL | 317,000 1/ | 0 | 0 | 200,000 | 117,000 |

Lorain Harbor, located on the south shore of Lake Erie approximately 25 miles west of Cleveland, OH, and 90 miles east of Toledo, OH, accommodates the waterborne movement of bulk cargo to and from the city of Lorain and points inland. This harbor services local industry within Lorain and interior industrial and commercial areas in the hinterland of Ohio and adjacent states. Iron ore and limestone are the major cargoes handled. Lorain Harbor, consists of a Lake Approach Channel, an Outer Harbor, and a Navigation Channel in the Black River which serves as the Inner Harbor. The Outer Harbor consists of a triangular shaped area of about 60 acres protected by four breakwater structures. The Inner Harbor consists of an improved navigation channel extending approximately 3 miles up the Black River. The recommended project would consist of three bank cuts. Two cuts would be located at consecutive bends in the river and the third would be located at the upper turning basin. These cuts will provide a wider channel for more efficient navigation of the river by 767-foot long vessels. The upper turning basin cut would be excavated to a depth of 21 feet and the other two cuts would be excavated to a depth of 27 feet. The Lorain Port Authority has indicated a willingness to accept the current cost sharing and financing policy for project construction. Consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, local interests will be required to provide lands, easements, rights-of-way, and required disposal areas, presently estimated at $640,000; modify or relocate buildings, utilities, roads, and other facilities, except railroad bridges, where necessary in the construction of the project, presently estimated at $80,000; pay 25 percent of the costs allocated to deep draft navigation during construction, presently estimated at $1,516,000; and pay an additional 10 percent of the costs allocated to deep draft navigation within a period of 30 years following completion if not offset by credit allowed by the Secretary of the Army. The FY 1987 allocation will be used to complete the Reevaluation Report and initiate the General Design Memorandum. The General Design Memorandum is scheduled for completion in May 1988.

1/ Preconstruction estimate, excluding plans and specifications.

|  |  |  |  |  |  |
|---|---|---|---|---|---|
| Subtotal Navigation Studies (CP&E) | 892,000 | 0 | 0 | 380,000 | 512,000 |

| Planning and Engineering Study | Region | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|---|
| | | $ | $ | $ | $ | $ |

b. Flood Damage Prevention Studies: The amount of $740,000 is requested in Fiscal Yeal 1987 to initiate one study and to continue one study.

ILLINOIS

| | | | | | | |
|---|---|---|---|---|---|---|
| Loves Park, IL | UM | 1,505,000 1/ | 200,000 | 325,000 | 490,000 | 490,000 |

Loves Park, Illinois is located in the north central portion of the state, adjacent to Rockford, Illinois. During rainstorms, runoff often exceeds the capacity of Loves Park Creek, a small tributary of the Rock River. The floods are normally of short duration but have high peak flows. The project would provide flood protection from the creek for a highly developed urbanized portion of the city of Loves Park, Illinois. The protective works include 17,900 lineal feet of improved channel, a 75,000 gallon per minute (GPM) pumping plant and 320 acre-feet of pond storage. The project provides protection against the 100-year flood event which would cause an estimated $11.0 million in damages (1985 dollars). Consistant with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, local interests will be required to provide lands, easements, and rights-of-way, modify or relocate buildings, utilities, roads, and other facilities, except railroad bridges, where necessary in construction of the project, presently estimated at $4,960,000; pay 7.3 percent of the costs allocated to flood control, presently estimated at $2,030,000; and bear all costs of operation, maintenance, and replacement of flood control facilities, presently estimated at $38,000. Fiscal Year 1986 funds are being used to continue the General Reevaluation Report. Fiscal Year 1987 funds will be used to complete the General Reevaluation Report and initiate the General Design Memorandum. The General Reevaluation Report is scheduled for completion in November 1986 and the General Design Memorandum is scheduled for completion in September 1988.

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1/ Preconstruction estimate, excluding plans and specifications.

| Planning and Engineering Study | Region | Total Estimated Federal Cost | Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|---|
| | | $ | $ | $ | $ | $ |
| MINNESOTA | | | | | | |
| Root River at Houston, MN | UM | 755,000 1/ | 0 | 0 | 250,000 | 505,000 |

The study area includes the Root River floodplain at Houston, in Houston County, in southeastern Minnesota. The Root River is a tributary of the Mississippi River. Flooding depths are generally quite substantial because of the narrow shape of the river valley. At Houston, Minnesota, the 100-year flood would inundate almost the entire city and would cause about $14,458,000 in damages. Flood levels would reach an average depth of 4 feet. The floods are characterized by a rapid rise and a short duration. The unglaciated terrain of the basin is characterized by the steep karst topography found throughout southeastern Minnesota and northwestern Illinois. A recurrence of the 1952 flood of record would cause an estimated $8,151,000 in damages at Houston under current conditions, if emergency measures were not successful. Project features include 3.1 miles of levee, 0.2 mile of road raise, interior drainage features and closure structures. Consistant with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, local interests will be required to provide lands, easements, and rights-of-way, presently estimated at $89,000; modify or relocate buildings, utilities, roads, and other facilities, except railroad bridges, where necessary in construction of the project, presently estimated at $16,000; pay 24 percent of the costs allocated to flood control, presently estimated at $1,955,000; and bear all costs of operation, maintenance, and replacement of flood control facilities, presently estimated at $16,000 annually. The proposed plan would reduce flood damages at Houston by 86 percent. Funds in FY 1987 will be used to initiate the General Reevaluation Report. The General Design Memorandum will be completed in September 1990.

1/ Preconstruction planning estimate excluding plans and specifications.

| | | | | | | |
|---|---|---|---|---|---|---|
| Subtotal Flood Damage Prevention Studies (CP&E) | | 2,260,000 | 200,000 | 325,000 | 740,000 | 995,000 |
| TOTAL SURVEYS - CONTINUATION OF PLANNING AND ENGINEERING STUDIES | | 3,152,000 | 200,000 | 325,000 | 1,120,000 | 1,507,000 |

4. PHASE I STAGE OF ADVANCE ENGINEERING AND DESIGN - NEW: None
5. PHASE I STAGE OF ADVANCE ENGINEERING AND DESIGN - CONTINUING: None

| Planning and Engineering Study | Region | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|---|
| | | $ | $ | $ | $ | $ |

6. PHASE I STAGE OF ADVANCE ENGINEERING AND DESIGN - CONTINUATION OF PLANNING AND ENGINEERING STUDIES.

a. Navigation: None

b. Flood Damage Prevention: The amount of $273,000 is requested in Fiscal Year 1987 to complete one study.

INDIANA

| | | | | | | |
|---|---|---|---|---|---|---|
| Little Calumet River, IN | UM | 1,400,000 1/ | 677,000 | 450,000 | 273,000 | 0 |

The Little Calumet River is located in northwestern Indiana and northeastern Illinois. The Indiana portion of the river flows through densely populated portions of the cities of Hammond, Gary, Munster, and Highland and causes extensive flood damages to intensively developed areas. The Chief of Engineers' Phase I General Design Memorandum (GDM) on the flood problem was completed in July 1984. The Phase I GDM recommends implementation of a flood damage reduction and general recreation plan along the main stem. The plan consists of levee construction between the Illinois-Indiana State line and Cline Avenue in Gary, a diversion control structure at the mouth of Hart Ditch, permanent evacuation of a portion of the Black Oak area of Gary, and nonstructural floodproofing measures in Gary. Local agencies would preserve wetlands and regulate floodplain development. General recreation facilities would be developed on project lands. The recommended project would provide flood protection from up to the 200-year flood event to the highly urbanized residential area west of Cline Avenue. Average annual benefits are estimated at $9,693,000 for flood control and $48,000 for recreation, for a total of $9,741,000. The plan is estimated to cost $32,900,000; the average annual cost is $4,126,000. The benefit to cost ratio is 2.4 to 1. Consistant with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, local interests will be required to provide lands, easements, and rights-of-way, presently estimated at $2,380,000; modify or relocate buildings, utilities, roads, and other facilities, except railroad bridges, where necessary in construction of the project, presently estimated at $5,250,000; pay one-half of the costs allocated to recreation, presently estimated at $220,000; bear all costs of operation, maintenance, and replacement of recreation facilities presently estimated at $10,000; pay 7.5 percent of the costs allocated to flood control, presently estimated at $3,260,000; and bear all costs of operation, maintenance, and replacement of flood control facilities, presently estimated at $114,000. Fiscal Year 1986 funds are being used to complete the Phase II General Design Memorandum, initiate the Feature Design Memorandum on the eastern flood control features, and continue field investigations needed for detail design. In FY 1987, the first Feature Design Memorandum will be completed. The Phase II General Design Memorandum is scheduled for completion in October 1986. The remaining preconstruction planning and engineering for the first Feature Design Memorandum, up to preparation of plans and specifications, is scheduled for completion in September 1987.

1/ Preconstruction estimate, excluding plans and specifications.

| Planning and Engineering Study | Region | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|---|
| | | $ | $ | $ | $ | $ |
| Subtotal Phase I Flood Damage Prevention Studies (CP&E) | | 1,400,000 | 677,000 | 450,000 | 273,000 | 0 |
| TOTAL PHASE I STAGE OF ADVANCE ENGINEERING AND DESIGN - CONTINUATION OF PLANNING AND ENGINEERING | | 1,400,000 | 677,000 | 450,000 | 273,000 | 0 |
| GRAND TOTAL - SURVEYS AND PHASE I STAGE OF ADVANCE ENGINEERING AND DESIGN | | 60,460,000 | 37,579,000 | 4,473,000 | 7,344,000 | 11,064,000 |

APPROPRIATION TITLE: General Investigations - Advance Engineering and Design - Local Protection (flood control)

PROJECT: East Grand Forks, Minnesota (Continuation of Planning)

LOCATION AND DESCRIPTION: East Grand Forks, in Polk County in northwestern Minnesota, is on the east bank of the Red River of the North directly opposite Grand Forks, North Dakota. The Red Lake River enters the Red River of the North at East Grand Forks. The authorized project provides for raising and widening 7,600 feet of earth levees, 1,500 feet of concrete floodwall, three pumping stations, a ramp at Fourth Street NW, relocation of a itary lift station, alteration of utilities, and interior drainage facilities. A reevaluation study of the authori roject recommended modifications due to changed conditions. The modified project includes both structural and nor ctural measures to protect against a flood having an recurrence interval of about once in 333 years. Structural co nents include 17,290 feet of earthen levee, 3,760 feet of concrete floodwall, road raise totaling 6,850 feet, three pumping stations, and other interior drainage facilities, acquisition of all lands, easements, and rights-of-way to include 78 structures along the right-of-way, and modifications to utilities. Nonstructural components include the evacuation of 129 structures from the floodplain, floodproofing, floodplain zoning, flood warning and forecasting, flood insurance, and an emergency plan of action. The plan also provides for emergency closure of eight roads or railroad openings and 18,980 feet of emergency freeboard barrier.

AUTHORIZATION: 1948, 1950, and 1970 Flood Control Acts.

BENEFIT-COST RATIO: The benefit-cost ratio last presented to Congress (FY 1986) was 3.1 to 1. The current benefit-cost ratio is 3.1 to 1 at 3-1/4 percent. The benefit-cost ratio was based on the project functioning independently.

SUMMARIZED FINANCIAL DATA

| | | | | |
|---|---|---|---|---|
| Estimated Federal Cost | | $21,800,000 | Preconstruction Planning Estimate | $2,000,000 |
| Estimated Non-Federal Cost | | 9,600,000 | Allocation to 30 September 1985 | 1,188,000 |
| Cash Contribution | $1,320,000 | | Allocation for FY 1986 | 300,000 |
| Other | 8,280,000 | | Planning Allocation for FY 1987 | 512,000 |
| Total Estimated Project Cost | | $31,400,000 | Balance to Complete Preconstruction Planning after FY 1987 | 0 |

JUSTIFICATION: Since the drought in the 1930's, frequent major floods on the Red River of the North main stem caused extensive urban damages at unprotected communities. Continued residential and industrial expansion at East Grand Forks has contributed to their urban flood problem. The population of East Grand Forks is 8,537. The city serves as a trading, service, and food processing center for the area's rich agricultural community. During the 1965, 1966, 1978, and 1979 spring floods, the city of East Grand Forks narrowly averted major disasters through massive emergency flood protection measures. The flood of 1965 caused damages of about $770,000, and floods in 1966 and 1969 each caused total damages of about $1,000,000. Without emergency protective measures and flood fighting efforts, damages would have been

JUSTIFICATION (con't): about $2,000,000 in 1965, $2,400,000 in 1966 and 1969, $4,100,000 in 1978, and $13,000,000 in 1979. Under current conditions and prices, an occurrence of a flood similar to that of the 1897 flood of record would cause damages estimated at $27,551,000. The existing city-constructed levees occupy terraces along the two rivers just landward of the wooded riverbanks. However, the earth levee is on unstable riverbanks and is neither high enough nor wide enough to provide assured flood protection. Interior drainage features for the existing local protection system are also grossly inadequate. Thus, recurrent development of costly flood emergency measures tends to depress the economy of the city and adversely affect the welfare of its citizens. Riverbank failures between Sixth Avenue NW and First Avenue NW have severely damaged the earth levee in this reach, requiring removal of much of the embankment. Such failures characteristically result when levees are constructed on the notoriously unstable banks of the Red River of the North. Because of the riverbank failures, the levee in the problem reach must be located a considerable distance from the riverbank to avoid repeated flooding of the community or costly flood emergency measures. The average annual benefits for the project are estimated at $2,817,500 for flood control and $139,600 for recreation based on 1 October 1985 prices.

NON-FEDERAL COST: Consistent with the cost sharing financing concepts agreed to by the Administration and the Senate Majority Leadership, local interests will be required to provide lands, easements, and rights-of-way, presently estimated at $6,870,000; modify or relocate buildings, utilities, roads, and other facilities, except railroad bridges, where necessary in construction of the project, presently estimated at $1,410,000; pay one-half of the separable and joint costs allocated to recreation, presently estimated at $220,000, and bear all costs of operation, maintenance, and replacement of recreation facilities, presently estimated at $2,000; pay five percent of the costs allocated to flood control, presently estimated at $1,100,000; and bear all costs of operation, maintenance, and replacement of flood control facilities, presently estimated at $28,000 annually.

STATUS OF LOCAL COOPERATION: A local cooperation agreement required under Section 221 of the 1970 Flood Control Act was executed by the city of East Grand Forks on 27 March 1975.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $21,800,000 is an decrease of $700,000 over the latest estimate presented to Congress. This change includes a decrease of $1,600,000 based on the current Federal and non-Federal project cost sharing policy, partially offset by increases of $148,000 for higher price levels, $360,000 for Engineering and Design, and $392,000 for Supervision and Administration based upon a reanalysis of requirements.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The final Environmental Impact Statement was filed with the Council on Environmental Quality on 21 April 1971. An updated draft Environmental Impact Statement was submitted to the Environmental Protection Agency on 20 October 1984. The updated final statement was submitted to EPA on 23 April 1985.

The provisions of Section 404 of the Clean Water Act were met with the submission of an Environmental Impact Statement. A Section 404(b)(1) Evaluation is not required.

OTHER INFORMATION: The urban flood control project was originally included as part of the Red River of the North, Minnesota and North Dakota, project authorized in 1948 and 1950. However, work on the East Grand Forks unit was suspended in 1956 when the city of East Grand Forks failed to provide the necessary local cooperation assurances. Prior to work suspension, $57,000 was used to prepare detailed plans. Following the flood of 1965, the city requested reactivation of the project and furnished a resolution indicating its willingness to meet the requirements of local cooperation. A local cooperation agreement under Section 221 of the 1970 Flood Control Act was subsequently furnished and accepted in 1975. The city has recently renamed all streets and project documents have been updated to reflect current names and addresses. Preconstruction planning is scheduled to be completed in October 1987.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATES:

Division: North Central
District: St. Paul

Project: East Grand Forks, Minnesota

| Item | Estimates Presented to Congress ($1,000) Original Baseline (1) | Cumulative Changes (2) | Last (3) | Incremental Change (4) | Current (5) |
|---|---|---|---|---|---|
| Federal Cost | $8,300 | | $22,500 | | $21,800 |
| (Price Level) | (Oct 1978) | | | | |
| Reason for Change | | (14,200) | | (-700) | |
| a. Price Escalation | | 4,172 | | 284 | |
| b. Design Changes | | 1,468 | | 0 | |
| c. Additional Function Added Under General Authorization | | 0 | | 0 | |
| d. Authorized Modification | | 0 | | 0 | |
| e. Post-Contract Award and Other Estimating Adjustments | | 560 | | 752 | |
| f. Schedule Changes | | 0 | | 0 | |
| g. Sundry | | 8,000 | | -1,600 1/ | |
| h. Real Estate | | 0 | | -136 | |

1/ Reflects current Federal - non-Federal cost sharing policies.

APPROPRIATION TITLE: General Investigations - Advance Engineering and Design - Local Protection (flood control)

PROJECT: Hannibal, Missouri

LOCATION AND DESCRIPTION: The authorized project would have provided flood protection for Hannibal by construction of a gated outlet structure at the mouth of Bear Creek and levees and flood walls extending from above the Mark Twain Bridge to below the railroad yard (2.1 miles). The reformulated project would provide local protection from floods up to the 500-year flood on the Mississippi River by construction of levees and floodwalls and drainage facilities (0.7 mile). The area to be protected covers 16 blocks of the city's downtown area and includes the historic Mark Twain District.

AUTHORIZATION: Flood Control Act of 1962.

BENEFIT-COST RATIO: The reformulated plan indicates the project has a benefit-to-cost ration of 1.6 to 1.0 at an interest rate of 8-5/8%. The benefit-cost ratio is based on the project functioning independently.

SUMMARIZED FINANCIAL DATA

| | | | | |
|---|---|---|---|---|
| Estimated Federal Cost | | $4,590,000 | Preconstruction Planning Estimate | $775,000 |
| Estimated Non-Federal Cost | | $1,530,000 | Allocations to 30 September 1985 | 521,000 |
| Cash Contribution | $940,000 | | Allocation for FY 1986 | 130,000 |
| Other | $590,000 | | Planning Allocation for FY 1987 | 124,000 |
| Total Estimated Project Cost | | $6,120,000 1/ | Balance to Complete Preconstruction Planning after FY 1987 | 0 |

1/ Cost based on the reformulated project to include 500-year protection for the downtown area.

JUSTIFICATION: The reformulated project would provide a high degree of flood protection for the city of Hannibal, Missouri, which has a population of 18,811 (1980 Census). The area to be protected contains about 50 acres extensively developed for light industrial, commercial, public, and residential purposes. The area has been damaged frequently in recent years. Major floods affecting the city occurred in May 1944, June 1947, April 1951, April 1960, April 1965, and the all-time record flood of April-May 1973. Damages resulting from these floods would amount to $2,905,000, $5,900,000, $615,000, $1,734,000, $3,870,000, $9,710,000, respectively, at current prices. Because of changes in the flood plain use since 1962, the city of Hannibal, by letter dated 10 Aug 1982, stated its lack of support for the authorized project and its desire to reformulate the project to address current problems and needs. The scope of a reformulated project will be generally limited to an area between the Mark Twain Memorial Bridge and Bear Creek. This area encompasses approximately 16 blocks of downtown riverfront property, and includes the area of high potential damage in the historic Mark Twain district. Portions of this district are on, or are currently eligible for inclusion in, the National Historic Register. The preliminary estimate of average annual flood damages prevented by the reformulated project is $921,100.

Division: North Central District: Rock Island Region: Upper Mississippi Project: Hannibal, Missouri

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NON-FEDERAL COST: Consistant with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, local interests will be required to provide lands, easements, and rights-of-way, presently estimated at $499,000; modify or relocate buildings, utilities, roads, and other facilities, except railroad bridges, where necessary in the construction of the project, presently estimated at $91,000; pay 15 percent of the costs allocated to flood control, presently estimated at $940,000; and bear all costs of operation, maintenance, and replacement of flood control facilities, presently estimated at $3,000 annually.

STATUS OF LOCAL COOPERATION: The city of Hannibal, Missouri is the local sponsor for this project. The latest letter of support is dated 7 March 1985. A local cooperation agreement will be requested upon approval of the General Design Memorandum.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal Cost Estimate of $4,590,000 is a decrease of $260,000 over the latest estimate, $4,850,000, presented to Congress. The change includes a decrease of $940,000 based on the current Federal and non-Federal cost sharing policy, partially offset by increases due to price level increases and design changes, $680,000.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH THE CLEAN WATER ACT:

a. Status of Environmental Impact Statement: The draft Environmental Impact Statement was submitted to the Environmental Protection Agency on 15 February 1985, and the final Environmental Impact Statement was officially filed on 22 November 1985. The project is anticipated to have minor impact on the cultural, social, and natural environment. The protection of the historic Mark Twain area will have a positive impact from the project.

b. Compliance with Clean Water Act: No Section 404 evaluation is required.

OTHER INFORMATION: Funds to resume planning were appropriated in FY 1982. Preconstruction planning is scheduled to be completed in October 1987.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATES:

Division: North Central
District: Rock Island

Project: Hannibal Missouri

| | Estimates Presented to Congress ($1,000) | | | | |
|---|---|---|---|---|---|
| Item | Original Baseline (1) | Cumulative Changes (2) | Last (3) | Incremental Change (4) | Current (5) |
| Federal Cost | $4,394 | | $4,850 | | $4,590 |
| (Price Level) | (May 1961) | | | | |
| Reason for Change | | (+456) | | (-260) | |
| a. Price Escalation | | +3,701 | | +100 | |
| b. Design Changes | | -3,245 | | +580 | |
| c. Additional Function Added Under General Authorization | | | | | |
| d. Authorized Modification | | | | | |
| e. Post-Contract Award and Other Estimating Adjustments | | | | | |
| f. Schedule Changes | | | | | |
| g. Sundry | | | | -940 | |
| h. Real Estate | | | | | |

APPROPRIATION TITLE: General Investigations - Advance Engineering and Design - Local Protection (flood control)

PROJECT: Sheyenne River Flood Control Project, North Dakota (formerly Kindred Lake) (Continuation of Planning)

LOCATION AND DESCRIPTION: The Sheyenne River, located in the southeastern portion of North Dakota, drains 7,140 square miles into the Red River of the North which flows northward to Lake Winnipeg in Manitoba, Canada. The Sheyenne River rises near Krueger Lake in Sheridan County, flows generally eastward about 150 river miles to McVille, southerly about 200 miles to the vicinity of Lisbon, and then forms a loop as it swings northeasterly for about 150 miles to its junction with the Red River of the North, about 10 miles north of Fargo. The recommended plan consists of three major components for Federal implementation: 1) 13.1 miles of levee and a 4.0 mile diversion channel at West Fargo/Riverside; 2) 7.6 miles of flood diversion channel from Horace to West Fargo; and 3) a five foot raise of the Baldhill Dam flood control pool.

AUTHORIZATION: 1970 Flood Control Act

BENEFIT COST RATIO: The current benefit-cost ratio is 7.6 to 1 at 8-5/8 percent. The benefit-cost ratio is based on the project functioning independently.

SUMMARIZED FINANCIAL DATA

| | | |
|---|---|---|
| Estimated Federal Cost | | $19,300,000 |
| Estimated Non-Federal Cost | | 21,700,000 |
| Cash Contribution | $ 2,050,000 | |
| Other | 19,650,000 | |
| Total Estimated Project Cost | | $41,000,000 |

| | |
|---|---|
| Preconstruction Planning Estimate | $4,200,000 |
| Allocations to 30 September 1985 | 2,705,000 |
| Allocations for FY 1986 | 800,000 |
| Planning Allocation for FY 1987 | 695,000 |
| Balance to Complete Preconstruction Planning after FY 1987 | 0 |

JUSTIFICATION: Recurrent flooding causes serious damage at the communities of Valley City, Lisbon, and West Fargo, and along the Sheyenne River. In addition, high Sheyenne River flows aggravate downstream flooding along the Red River of the North. The maximum flood of record in 1882 inundated much of Valley City and Kindred. In addition, over 100,000 acres of cropland in the basin were flooded by the Red River of the North and the Sheyenne, Wild Rice, and Maple Rivers. On 5 July 1975, the flood in the Sheyenne River basin crested at Kindred within 0.3 foot of the record flood, and the crest at West Fargo set a new record. Actual flood damages were $96,762,000, of which $2,132,000 were urban and $94,630,000 were rural. Urban flood damages of $14,159,000 were prevented by emergency levee protection. The rural damages include cross-country (sheet flow) as well as overbank flooding. In 1979 the Sheyenne River at West Fargo reached a flow of 3,500 cfs and a stage .03 foot less than the 1975 summer flood. Damages including the cost of successful flood fights were $7,388,000, of which $1,903,000 were urban, $4,676,000 agricultural, and $809,000 transportation. The average annual flood damages for the Sheyenne River basin from overbank flooding over an assumed 100-year

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JUSTIFICATION (con't): period at October 1985 price levels are estimated at $29,716,000, of which $28,033,000 are urban, $1,455,000 agricultural, and $228,000 transportation. The recommended improvements will protect about 2,000 residences and farmsteads in the 100-year floodplain and reduce flood damages on over 50,000 acres of agricultural land.

NON-FEDERAL COST: Consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, local interest will be required to provide lands, easements, and rights-of-way, presently estimated at $10,610,000; modify or relocate buildings, utilities, roads, and other facilities, except railroad bridges, where necessary in the construction of the project, presently estimated at $9,040,000; pay 5 percent of the costs allocated to flood control, presently estimated at $2,050,000; and bear all costs of operation, maintenance, and replacement of flood control facilities, presently estimated at $95,400 annually.

STATUS OF LOCAL COOPERATION: On 7 July 1982, the North Dakota State Water Commission furnished a letter of support for the recommended flood control plan in the lower Sheyenne River basin and also expressed their willingness to act as a non-Federal sponsor. On 2 August 1982 and 30 July 1982, respectively, the city of West Fargo and the Southeast Cass Water Resource District furnished letters of support and indicated their willingness to cooperate with the North Dakota State Water Commission. The North Dakota State Water commission reiterated its support of the project by letter dated 20 May 1983, and the Southeast Cass Water Resource District also reiterated its support by letter dated 30 March 1984. Formal assurances of local cooperation will be requested after completion of the General Design Memorandum.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $19,300,000 is a decrease of $6,900,000 over the latest estimate ($26,200,000) presented to Congress. This change includes a decrease of $7,350,000 based on the current Federal and non-Federal cost sharing policy, partially offset by an increase due to higher price levels, $450,000.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH THE CLEAN WATER ACT: The draft Environmental Impact Statement was filed with the Environmental Protection Agency on 28 May 1982. The final statement was filed with the EPA on 13 April 1984.

The provisions of Section 404 of the Clean Water Act will be met with the submission of an Environmental Impact Statement including a Section 404(b)(1) Evaluation, to Congress in the third quarter of FY 1986.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1976. The authorized project consisted of an impoundment of the Sheyenne River, about 70 miles above its mouth and about 5 miles above Kindred, North Dakota, for flood control, water quality control, recreation, and fish and wildlife purposes. However, postauthorization activities and public coordination efforts indicated that a complete reevaluation of alternatives was necessary. Therefore, the General Reevaluation study was conducted to reevaluate the problems and needs in the area and to reformulate alternative solutions. An extensive public participation program was conducted to resolve the complex issues being studied. The General Reevaluation studies concluded that a comprehensive plan for flood damage reduction should be adopted for the basin which includes a levee and diversion project at West Fargo/Riverside, a flood diversion channel from Horace to West Fargo, and a five-foot raise of the flood control pool at Baldhill Dam for implementation by the Corps of Engineers. Several other components are included in the selected plan for implementation by non-Federal interests or other Federal agencies. The General Design Memorandum is scheduled for completion in October 1986. Preconstruction planning is scheduled to be completed in September 1987.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

**Division:** North Central | **Project:** Sheyenne River, North Dakota

**District:** St. Paul

| Item | Estimates Presented to Congress ($1,000) | | | | |
|---|---|---|---|---|---|
| | Original Baseline (1) | Cumulative Changes (2) | Last (3) | Incremental Change (4) | Current (5) |
| Federal Cost<br>(Price Level) | $24,400<br>(Oct 1982) | | $26,200 | | $19,300<br>(Oct 1985) |
| Reason for Change | | (1,800) | | (-6,900) | |
| a. Price Escalation | | 1,800 | | + 450 | |
| b. Design Changes | | 0 | | 0 | |
| c. Additional Function Added Under General Authorization | | 0 | | 0 | |
| d. Authorized Modification | | 0 | | 0 | |
| e. Post-Contract Award and Other Estimating Adjustments | | 0 | | 0 | |
| f. Schedule Changes | | 0 | | 0 | |
| g. Sundry | | 0 | | -7,350 1/ | |
| h. Real Estate | | 0 | | 0 | |

1/ Reflects current Federal - non-Federal cost sharing policies.

APPROPRIATION TITLE: General Investigations - Advance Engineering and Design - Local Protection (flood control)

PROJECT: Ottawa, OH

LOCATION: Ottawa is located on the Blanchard River approximately 22 miles upstream from its confluence with the Auglaize River. The Blanchard River drains 765 square miles of the extreme southeastern corner of the Maumee River Basin which covers about 6,586 square miles in northwestern Ohio. The authorized project is a local flood protection project to reduce overbank flooding of Blanchard River at Ottawa, Ohio, and consists of levees, floodwalls, bridge changes, and pumping station.

AUTHORIZATION: Section 203 of the 1966 Flood Control Act (PL 89-789).

BENEFIT TO COST RATIO: The benefit-to-cost ratio is 1.0 at 8-5/8%. The benefit-to-cost ratio is based on the project functioning independently.

SUMMARIZED FINANCIAL DATA

| | | |
|---|---|---|
| Estimated Federal Cost (CofE) | | $962,000 |
| Estimated Non-Federal Cost | | 320,000 |
| Cash Contribution | 308,000 | |
| Other | 12,000 | |
| Total Estimated Project Cost | | $1,282,000 |

| | |
|---|---|
| Preconstruction Planning Estimate | $435,000 |
| Allocations to 30 September 1985 | 250,000 |
| Allocations for FY 1986 | 0 |
| Planning Allocations for FY 1987 | 150,000 |
| Balance to Complete Preconstruction Planning after FY 1987 | 35,000 |

JUSTIFICATION: Overbank flooding of the Blanchard River occurs annually, and the reformulated project would substantially reduce flood damage to residential and commercial properties by about $120,000 on an average annual basis.

NON-FEDERAL COST: Consistant with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, local interests will be required to provide lands, easements, and rights-of-way, presently estimated at $12,000; pay 24 percent of the costs allocated to flood control, presently estimated at $308,000; and bear all costs of operation, maintenance, and replacement of flood control facilities, presently estimated at $5,000 annually.

STATUS OF LOCAL COOPERATION: The local sponsor, the Maumee Watershed Conservancy District, furnished an expression of intent on 9 October 1985 to provide the items of local cooperation specified in HD 485, 89th Congress. In addition, they stated willingness to "consider additional cost-sharing at the time of construction." The letter of assurance was approved by ASA on 18 October 1985.

Division: North Central District: Buffalo Region: Great Lakes Project: Ottawa, Ohio

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COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $962,000 is the initial estimate presented to Congress.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The EIS, a 404 Evaluation Report in compliance with the Clean Water Act, will be coordinated with all required agencies and the public for review and comment to be completed by November 1986. A Section 401 Certification from the State of Ohio is also required.

OTHER INFORMATION: A recently completed Preliminary Assessment indicates that a plan based on current conditions and using current procedures will be of considerably less scope than the authorized project. Preconstruction planning is scheduled to be completed in September 1988.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: North Central
District: Buffalo

Project: Ottawa, Ohio

| | Estimates Presented to Congress ($1,000) | | | | |
|---|---|---|---|---|---|
| Item | Original Baseline (1) | Cumulative Changes (2) | Last (3) | Incremental Change (4) | Current (5) |
| Federal Cost | 962 | | 1/ | | 962 |
| (Price Level) | (Oct 85) | | | | (Oct 85) |
| Reason for Change | | 0 | | 0 | |
| a. Price Escalation | | 0 | | 0 | |
| b. Design Changes | | 0 | | 0 | |
| c. Additional Function Added Under General Authorization | | 0 | | 0 | |
| d. Authorized Modification | | 0 | | 0 | |
| e. Post-Contract Award and Other Estimating Adjustments | | 0 | | 0 | |
| f. Schedule Changes | | 0 | | 0 | |
| g. Sundry | | 0 | | 0 | |
| h. Real Estate | | 0 | | 0 | |

1/ Project has not previously been presented to Congress.

APPROPRIATION TITLE: General Investigations - Advance Engineering and Design - Reservoirs (flood control)

PROJECT: Twin Valley Lake, Wild Rice River, Minnesota (Continuation of Planning)

LOCATION AND DESCRIPTION: The project is located in Norman County in west-central Minnesota northeast of the city of Moorhead, on the Wild Rice River about 2 miles east of Twin Valley, Minnesota, Congressional District No. 7. The Wild Rice River is a tributary of the Red River of the North. The plan of improvement provides for a 52,200-acre-foot impoundment created by an earth fill dam 84 feet high and 7,700 feet long. Storage capacity would provide 44,700 acre-feet for flood control and 7,500 acre-feet for recreation and sedimentation. The primary purposes of the project are to reduce agricultural and urban flood damages downstream and provide a lake for water-based recreation.

AUTHORIZATION: 31 December 1970 Flood Control Act (H.D. 366-90-2)

BENEFIT-COST RATIO: The benefit-cost ratio last presented to Congress (FY 1984) was 1.3. The current benefit-cost ratio is 1.2 at 8 5/8 percent. The benefit-cost ratio was based on the project functioning independently.

## SUMMARIZED FINANCIAL DATA

| | | | | |
|---|---|---|---|---|
| Estimated Federal Cost (Ultimate) | | $19,400,000 | Preconstruction Planning Estimate | $2,200,000 |
| Estimated Non-Federal Cost | | 10,700,000 | Allocations to 30 September 1985 | 1,962,000 |
| Cash Contribution: | | | Conference Allowance for FY 1986 | 100,000 |
| Flood Control | $10,242,000 | | Allocation for FY 1986 | 100,000 |
| Recreation and Fish and Wildlife | 458,000 | | Planning Allocation for FY 1987 | 138,000 |
| Total Estimated Project Cost | | $30,100,000 | Balance to Complete Preconstruction Planning after FY 1987 | 0 |

JUSTIFICATION: Recurrent flooding causes serious damage to agricultural, residential, commercial, and publicly owned properties along the Wild Rice and Marsh Rivers. Most floods result from snowmelt runoff, often increased by spring rains. Since the terrain of the lower basin is very flat, flood flows in excess of channel capacities inundate large areas. High flows also aggravate downstream flooding along the Red River of the North. Since 1881, 23 damaging floods have occurred in the Wild Rice and Marsh River basins. The maximum flood of record in 1909 inundated the entire community of Ada as well as nearly 100,000 acres of cropland. A flood in the spring of 1969 inundated about 69,000 acres of land causing $1,315,000 in damages, including $5,400 in damages and flood fight costs in Ada. The summer 1975 flood caused $7,284,000 in damages. Another severe flood occurred in 1978 and caused $2,586,000 in damages. Damages were less than those in 1975 because the flood occurred early in the year. In 1979, the highest stages ever recorded occurred at Shelley, due mainly to ice jams on the river, and the flood caused $2,019,000 in damages. Under present conditions and at present prices, floods similar to those in 1969, 1975, 1978, and 1979 would cause damages of $14,500,000, $21,500,000, $9,000,000, and $3,100,000 respectively. The project would supplement an existing channel

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JUSTIFICATION (con't): improvement project on the Wild Rice and Marsh Rivers for flood control and provide a conservation pool and associated public-use facilities adequate to meet present and foreseeable future demands of the surrounding area. The project would control floods at Ada up to the 100-year flood. The average annual benefits are as follows:

| Benefits | Amount (1 October 1985) |
|---|---|
| Flood Control | $2,956,100 |
| (Urban) | |
| Protecting existing development | (1,205,400) |
| (Rural) | |
| Agricultural | (1,750,700) |

NON-FEDERAL COSTS: Consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, local interests will be required to pay 35 percent of the costs allocated to flood control, presently estimated at $10,242,000; bear all costs of operation, maintenance, and replacement of flood control facilities, presently estimated at $196,700 annually; pay 50 percent of the costs allocated to recreation, presently estimated at $445,000; bear all costs of operation, maintenance, and replacement of recreation facilities, presently estimated at $439,700 annually; and pay 1/3 of the costs allocated to Fish and Wildlife enhancement, presently estimated at $13,000.

STATUS OF LOCAL COOPERATION: By letter dated 17 August 1982, the Wild Rice Watershed Board expressed their intent to provide the local cooperation requirements and participate in innovative financing. By letter dated 31 August 1984, the Board restated its support for the project and its intense desire to move forward with the project.

COMPARISON OF FEDERAL COST ESTIMATES: The current ultimate Federal cost estimate of $19,400,000 is a decrease of $9,854,000 over the latest estimate ($29,254,000 - October 1984) presented to Congress. This change includes a decrease of $102,000 based upon real estate index values, and a decrease of $10,245,000 to reflect the current Federal and non-Federal cost sharing policy, partially offset by an increase of $493,000 for higher price levels.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The final Environmental Impact Statement was filed with Council on Environmental Quality on 29 September 1977. A draft supplement to the Environmental Impact Statement addressing fish and wildlife compensation and reservoir water quality was released in June 1980. The final supplement is scheduled to be completed in the fourth quarter of FY 1986.

The provisions of Section 404 of the Clean Water Act will be met with the submission of the Environmental Impact Statement Supplement, including a Section 404(b)(1) Evaluation, to Congress in the fourth quarter of FY 1986 and will require subsequent authorization and appropriation action on this project by Congress.

OTHER INFORMATION: The U.S. Fish and Wildlife Service (FWS) and the Minnesota Department of Natural Resources (MDNR) expressed concern over the loss of fish and wildlife habitat due to project construction. A cooperative study resulted in the development of a compensation plan to offset these losses. This plan will require congressional authorization to be incorporated into the project. The report on this plan was completed in April 1985. Preconstruction planning is scheduled to be completed in April 1987.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: North Central
District: St. Paul

Project: Twin Valley Lake, Wild Rice River, Minnesota

| Item | Estimates Presented to Congress ($1,000) | | | | |
|---|---|---|---|---|---|
| | Original Baseline | Cumulative Changes | Last | Incremental Change | Current |
| Federal Cost (ultimate)<br>(Price Level) | 11,000<br>(Jul 1970) | | 29,254<br>(Oct 1984) | | 19,400<br>(Oct 1985) |
| Reason for Change | | (18,254) | | (-9,854) | |
| a. Price Escalation | | 21,524 | | 493 | |
| b. Design Changes | | -1,346 | | 0 | |
| c. Additional Function Added Under General Authorization | | 0 | | 0 | |
| d. Authorized Modification | | 2,158 | | 0 | |
| e. Post-Contract Award and Other Estimating Adjustments | | -4,423 1/ | | 0 | |
| f. Schedule Changes | | 0 | | 0 | |
| g. Sundry | | 0 | | (10,245) 2/ | |
| h. Real Estate | | 341 | | -102 | |

1/ Reanalysis of requirements for Engineering and Design, Supervision and Administration and a reanalysis of unit prices.

2/ Reflects current Federal - non-Federal cost sharing policies.

APPROPRIATION TITLE: Construction, General-Local Protection (Flood Control)

PROJECT: South Quincy Drainage and Levee District, Illinois (New)

LOCATION: The South Quincy Drainage and Levee District, in Adams County, is located on the left bank of the Mississippi River between river miles 318.5 and 325.5, just south of Quincy, Illinois. It is bounded by the Mississippi River on the west, the river bluffs on the east, Curtis Creek on the north, and Mill Creek on the south.

AUTHORIZATION: Unauthorized, implementation contingent upon Congressional authorization.

BENEFIT-COST RATIO: The remaining benefit-remaining cost ratio is 4.3 to 1 at 8-5/8 percent. The benefit-cost ratio is 4.2 to 1 at 8 5/8 percent. The benefit-cost ratio is based on the project functioning independently.

| SUMMARIZED FINANCIAL DATA | | | Accum. % of Est. Fed. Cost |
|---|---|---|---|
| Estimated Federal Cost | | $ 9,670,000 | |
| Estimated Non-Federal Cost | | 3,230,000 | |
| Cash Contribution | $2,930,000 | | |
| Other | 300,000 | | |
| Total Estimated Project Cost | | $12,900,000 | |
| Allocations to 30 September 1985 | | $ 11,000 | |
| Conference Allowance for FY 1986 | | 320,000 | |
| Allocation for FY 1986 | | 320,000 | |
| Allocations to Date | | 331,000 1/ | 3 |
| Allocation Requested for FY 1987 | | 1,000,000 | 10 |
| Scheduled Balance to Complete after FY 1987 | | 8,339,000 | |
| Unscheduled Balance to Complete after FY 1986 | | 0 | |

1/ Reflects $331,000 appropriated under General Investigations.

| STATUS: (1 January 1986) | PERCENT COMPLETE | COMPLETION SCHEDULE |
|---|---|---|
| Not Started | | June 1990 |

PHYSICAL DATA

The plan of improvement provides for raising 8.8 miles of existing levee approximately 3.5 feet in height, constructing 0.4 miles of additional levees and floodwalls, raising existing road ramps, constructing a railroad closure, and modification of the discharge line at the existing pumping plant.

Division: North Central    District: Rock Island    Region: Upper Mississippi

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South Quincy Drainage and Levee
District, Illinois

JUSTIFICATION: About 8.8 miles of earth levee and a pumping station constructed by local interests and improved by the Federal Government in 1967 was designed and built to provide protection against a flood having a 2 percent chance of being equalled or exceeded in any one year (50-year frequency). Development of recent flood data, high costs of massive emergency operations, seepage damage, and preventive evacuation have all emphasized the need for additional protection. The proposed improvements would provide protection from floods having a 0.2 percent chance of being equalled in any year (500-year frequency). The District consists of approximately 5,800 acres of which 3,800 acres are crop land, 165 acres are industrial-commercial-residential, and 1,835 acres are in lakes, bottom land forests and other uses. Development in the area includes 14 commercial/industrial firms and 68 residences. The industrial-commercial facilities have an estimated value in excess of $370,000,000 at current prices. Major Mississippi River floods in 1965 and 1973 nearly overtopped the existing levees. Damages from the 1973 flood were $1,200,000. These damages, which were generally attributed to seepage, would amount to $2,788,000 at current prices. If overtopping or levee failure had occurred, an estimated $34,000,000 in damages would have occurred. These damages would be $197,000,000 under current conditions. In the event of occurrence of the design flood, construction of the project would prevent $242,000,000 in damage. Average annual flood control benefits are estimated at $4,895,700 based on 1 October 1985 prices.

FISCAL YEAR 1987: The requested amount will be applied as follows:

| | |
|---|---|
| Initiate Construction Stage I Levees & Floodwalls | $ 560,000 |
| Engineering and Design | 360,000 |
| Supervision and Administration | 80,000 |
| Total | $1,000,000 |

Funds requested are based on an economical rate of construction with project completion scheduled for June 1990.

NON-FEDERAL COSTS: Consistent with the cost-sharing and financing concepts agreed to by the Administration and Senate Majority Leadership, local interests will be required to provide lands, easements, rights-of-way, and material disposal areas, presently estimated at $258,000; modify or relocate buildings, utilities, roads and other facilities, except railroad bridges, ramps, and approaches thereto, where necessary in the construction of the project, presently estimated at $42,000; make a cash contribution to increase their share to 25 percent of total construction cost, presently estimated at $2,930,000; and bear all costs of operation, maintenance, and replacement of flood control facilities, presently estimated at $5,500 annually. Local interests have also agreed to make all required payments and voluntary contributions concurrently with project construction.

STATUS OF LOCAL COOPERATION: A letter of assurance, constituting an expression of intent to cooperate with the Federal Government in initiating construction of the project in Fiscal Year 1987, was signed by the Chairman of the South Quincy Drainage and Levee District on 24 October 1985. Rights-of-way for Stage I, Levees and Floodwalls, are scheduled to be made available in April 1987.

COMPARISON OF FEDERAL COST ESTIMATE: The current Federal Cost Estimate of $9,670,000 is a decrease of $1,730,000 from the latest estimate ($11,400,000) presented to Congress. This change includes increases of $200,000 based on higher price levels to 1 October 1985 and $1,000,000 for an estimated inflation allowance from 1 October 1985 through the construction period, offset by a decrease of $2,930,000 based on an adjustment between Federal and non-Federal cost estimates consistent with the cost-sharing and financing concepts agreed to by the Administration and Senate Majority Leadership.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT:

a. Status of Environmental Impact Statement: The final Environmental Impact Statement was filed with the Environmental Protection Agency on 8 July 1983. Due to recent changes in borrow sites, an Environmental Assessment will be coordinated in the fourth quarter of Fiscal Year 1986 as part of the General Design Memorandum studies to satisfy the requirements of the National Environmental Policy Act in accordance with the guidelines of the Council on Environmental Quality. If no significant impacts are identified, a Finding of No Significant Impact will be prepared and scheduled for signature by the District Commander in the fourth quarter of Fiscal Year 1986.

b. Compliance with Clean Water Act: The provisions of Section 404 of the Clean Water Act for the overall project will be met with the submission of the final Environmental Impact Statement, including a Section 404(b)(1) Evaluation, to Congress in the third quarter of Fiscal Year 1986 and will require a subsequent appropriation or authorization action on this project by Congress. With regard to the changed borrow sites, the provisions of Section 404 of the Clean Water Act will be met by a Section 404(b)(1) Evaluation, issuance of a Public Notice, a Certification from the State of Illinois, and the District Commander's signature on the Section 404(b)(1) Evaluation Report, all in the fourth quarter of Fiscal Year 1986.

OTHER INFORMATION: The initial Continuation of Planning and Engineering funds were received in Fiscal Year 1985. Continuation of Planning and Engineering is scheduled for completion in September 1986.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: North Central
District: Rock Island

Project: South Quincy Drainage and Levee District, Illinois

| Item | Estimates Presented to Congress ($1,000)<br>Original Baseline (1) | Cumulative Changes (2) | Last (3) | Incremental Change (4) | Current (5) |
|---|---|---|---|---|---|
| Federal Cost (Price Level) | $ 11,400 (Oct 1984) | | $ 11,400 (Oct 1984) | | $ 9,670 1/ |
| Reason for Change | | 0 | | (-1,730) 1/ | |
| a. Price Escalation | | 0 | | 1,200 | |
| b. Design Changes | | 0 | | 0 | |
| c. Additional Function Added Under General Authorization | | 0 | | 0 | |
| d. Authorized Modification | | 0 | | 0 | |
| e. Post-Contract Award or Other Estimating Adjustments | | 0 | | 0 | |
| f. Schedule Changes | | 0 | | 0 | |
| g. Sundry | | 0 | | -2,930 2/ | |
| h. Real Estate | | 0 | | 0 | |

1/ Includes $1,000 allowance for estimated inflation from 1 October 1985 through the construction period.

2/ Adjustment to reflect non-Federal cash contribution toward project costs consistent with the cost-sharing and financing concepts agreed to by the Administration and Senate Majority Leadership.

REPORTS CONTROL SYMBOL: DAEN-CWB-13

| | |
|---|---|
| APPROPRIATION TITLE: CONSTRUCTION GENERAL | CLASSIFICATION: LOCAL PROTECTION PROJECT (FLOOD CONTROL) |

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM | PROJECT COST ESTIMATE | TOTAL TO 30 SEP 19 85 | CURRENT FY 19 86 | BUDGET FY 19 87 | BALANCE TO COMPLETE AFTER FY 19 87 |
|---|---|---|---|---|---|---|
| | (a) | (b) | (c) | (d) | (e) | (f) |
| 1 | RELOCATIONS - Utilities | $ 18,000 | $ 0 | $ 0 | $ | $ 18,000 |
| 2 | LEVEES & FLOODWALLS | 10,560,000 | 0 | 0 | 740,000 | 9,820,000 |
| 3 | PUMP PLANT | 110,000 | 0 | 0 | 0 | 110,000 |
| 4 | ENGINEERING AND DESIGN | 1,150,000 1/ | 0 | 310,000 | 460,000 | 380,000 |
| 5 | SUPERVISION AND ADMINISTRATION | 762,000 | 0 | 21,000 | 100,000 | 641,000 |
| 6 | | | | | | |
| 7 | TOTAL APPLIED COST (Federal Funds & | 12,600,000 | 0 | 331,000 | 1,300,000 | 10,969,000 |
| 8 | non-Federal Contributions) | | | | | |
| 9 | Undistributed Costs (None) | | | | | |
| 10 | TOTAL PROJECT COSTS (Federal Funds & | 12,600,000 | 0 | 331,000 | 1,300,000 | 10,969,000 |
| 11 | non-Federal Contributions) | | | | | |
| 12 | Pending Adjustments (None) | | | | | |
| 13 | TOTAL COSTS (Federal Funds & | 12,600,000 | 0 | 331,000 | 1,300,000 | 10,969,000 |
| 14 | non-Federal Contributions) | | | | | |
| 15 | | | | | | |
| 16 | FEDERAL COSTS | | | | | |
| 17 | Total Applied Costs | 9,670,000 | 0 | 331,000 | 1,000,000 | 8,339,000 |
| 18 | Undistributed Costs (None) | | | | | |
| 19 | Total Project Costs | 9,670,000 | 0 | 331,000 | 1,000,000 | 8,339,000 |
| 20 | Pending Adjustments (None) | | | | | |
| 21 | Total Costs | 9,670,000 | 0 | 331,000 | 1,000,000 | 8,339,000 |
| 22 | Undelivered Orders | | | | | |
| 23 | Total Obligations | | 0 | 331,000 | 1,000,000 | 8,339,000 |
| 24 | | | | | | |
| 25 | NON-FEDERAL COSTS | | | | | |
| 26 | Total Applied Costs | 2,930,000 | 0 | 0 | 300,000 | 2,630,000 |
| 27 | Undistributed Costs (None) | | | | | |
| 28 | Total Project Costs | 2,930,000 | 0 | 0 | 300,000 | 2,630,000 |
| 29 | Pending Adjustments (None) | | | | | |
| 30 | Total Costs | 2,930,000 | 0 | 0 | 300,000 | 2,630,000 |
| 31 | Undelivered Orders | | | | | |
| 32 | Total Obligations | | 0 | 0 | 300,000 | 2,630,000 |
| 33 | | | | | | |

| | | | |
|---|---|---|---|
| EFFECTIVE DATE 1 JAN 86 | DIVISION NORTH CENTRAL<br>DISTRICT ROCK ISLAND | REGION UPPER MISSISSIPPI<br>BASIN SALT-SNY-ILLINOIS | PROJECT SOUTH QUINCY DRAINAGE & LEVEE DISTRICT, ILLINOIS |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986

REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: LOCAL PROTECTION PROJECT (FLOOD CONTROL)

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM (a) | PROJECT COST ESTIMATE (b) | TOTAL TO 30 SEP 19 85 (c) | CURRENT FY 19 86 (d) | BUDGET FY 19 87 (e) | BALANCE TO COMPLETE AFTER FY 19 87 (f) |
|---|---|---|---|---|---|---|
| 1 | METHOD OF FINANCING | | | | | |
| 2 | FEDERAL COSTS | | | | | |
| 3 | Allocations | | 11,000 | 320,000 | | |
| 4 | Unobligated Carryover from Prior Year | | | +11,000 | | |
| 5 | Total Funds Available for Obligation | | | 331,000 2/ | | |
| 6 | Appropriations Required | | | | 1,000,000 | 8,339,000 |
| 7 | | | | | | |
| 8 | NON-FEDERAL COSTS | | | | | |
| 9 | Cash Contributions | 2,930,000 | 0 | 0 | 300,000 | 2,630,000 |
| 10 | Other Cost | 300,000 | 0 | 0 | 50,000 | 250,000 |
| 11 | Lands and Damage | (258,000) | (0) | (0) | (50,000) | (208,000) |
| 12 | Relocations | (42,000) | (0) | (0) | (0) | (42,000) |
| 13 | Other | (0) | (0) | (0) | (0) | (0) |
| 14 | Total Non-Federal Costs | 3,230,000 | 0 | 0 | 350,000 | 2,880,000 |
| 15 | | | | | | |
| 16 | | | | | | |
| 17 | | | | | | |
| 18 | 1/ Includes $6,000 for Real Estate Activities | | | | | |
| 19 | | | | | | |
| 20 | 2/ Includes $331,000 appropriated under General Investigations. | | | | | |
| 21 | | | | | | |
| 22 | | | | | | |
| 23 | | | | | | |
| 24 | | | | | | |
| 25 | | | | | | |
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| 32 | | | | | | |
| 33 | | | | | | |

| | | | |
|---|---|---|---|
| EFFECTIVE DATE<br>1 JAN 86 | DIVISION NORTH CENTRAL<br>DISTRICT ROCK ISLAND | REGION UPPER MISSISSIPPI<br>BASIN SALT-SNY-ILLINOIS | PROJECT SOUTH QUINCY DRAINAGE & LEVEE DISTRICT, ILLINOIS |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986

APPROPRIATION TITLE: Construction, General - Local Protection (Flood Control)

PROJECT: South Fork Zumbro River at Rochester, Minnesota (New Start)

LOCATION: Rochester is located in Olmsted County in southeastern Minnesota on the South Fork of the Zumbro River, a tributary of the Mississippi River.

AUTHORIZATION: Project not yet authorized for construction, implementation is contingent upon Congressional authorization.

BENEFIT-COST RATIO: The benefit-cost ratio is 1.4 to 1 at 8 5/8 percent. The benefit-cost ratio is based on the project functioning independently.

### SUMMARIZED FINANCIAL DATA

| | | | Accum. % of Est. Fed. Cost |
|---|---|---|---|
| Estimated Federal Cost | | $53,000,000 | |
| Estimated Non-Federal Cost | | 17,900,000 | |
| Cash Contribution | $ 7,195,000 | | |
| Other | 10,705,000 | | |
| Total Estimated Project Cost | | $70,900,000 | |
| Allocations to 30 September 1985 | | $ 2,880,000 1/ | |
| Conference Allowance for FY 1986 | | 0 | |
| Allocation for FY 1986 | | 250,000 2/ | |
| Allocations to Date | | 3,130,000 | 6 |
| Allocation Requested for FY 1987 | | 1,400,000 | 10 |
| Scheduled Balance to Complete after FY 1987 | | 48,470,000 | |
| Unscheduled Balance to Complete after FY 1987 | | 0 | |

| STATUS: (1 January 1986) | PERCENT COMPLETE | COMPLETION SCHEDULE |
|---|---|---|
| Relocations | 0 | Sep 1991 |
| Fish and Wildlife Facilities | 0 | Sep 1988 |
| Channels | 0 | Jul 1992 |
| Levees | 0 | Jul 1992 |
| Recreation Facilities | 0 | Sep 1991 |
| Entire Project | 0 | Jul 1992 |

1/ Includes $951,000 appropriated under General Investigations.

2/ Appropriated under General Investigations.

DIVISION: North Central DISTRICT: St. Paul REGION: Upper Mississippi

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South Fork Zumbro River at Rochester, Minnesota

## PHYSICAL DATA

| Relocations: | |
|---|---|
| Road and Highway Bridge Modifications | 14 |
| Road and Highway Bridge Replacements | 4 |
| Railroad Bridge Modification | 1 |
| Railroad Bridge Replacement | 2 |
| Utility Crossings | 12 |

| Channels: | |
|---|---|
| Earth lined | 0.5 mile |
| Riprap and gabion lined | 6.1 miles |
| Concrete lined | 0.9 mile |
| Dredged | 0.5 mile |
| Drop structures | 6 |

| Levees: | |
|---|---|
| Primary Levees | 1.9 miles |
| Tieback Levees | 0.5 mile |

| Recreation and Fish and Wildlife Facilities: | |
|---|---|
| Foot and Bicycle Trails | 6 miles |
| Footbridge Modification | 1 |
| Footbridge Replacement | 9 |
| Wildlife Mitigation Area | 142 acres |

JUSTIFICATION: A potential exists for catastrophic flood damages in Rochester where more than one-third of the city lies within the floodplain formed primarily by three streams, the South Fork Zumbro River, Cascade Creek, and Bear Creek. Rochester, with a population in 1980 of 57,890 is a city of commerce, industry, medical facilities, and cultural institutions in the midst of an agricultural and dairying region. Major floods have occurred three times during the past 23 years. In the spring of 1962, the water in the South Fork Zumbro River and the tributaries rose rapidly. The ice cover broke up and created ice jams which caused water to rise higher. The resulting flood damages were estimated at $1.6 million. Under current conditions and prices a recurrence of the 1962 flood could cause damages estimated at $26.5 million. In 1965, another severe flood occurred causing damages estimated at $8.2 million. A recurrence of the 1965 flood could cause damages of approximately $38.6 million under current conditions and prices. The most recent flood, which is also the flood of record, occurred over a portion of the project area in July 1978 causing a loss of 5 lives and estimated damages of $58.8 million. Potential damages from a flood having a frequency of occurrence of once in 200 years (design flood) could be more than $115.1 million under present conditions. Over 2,000 residences, 200 businesses, 21 industries, and 10 public buildings at Rochester would be subject to flood damage posing a severe threat to the life and security of the residents. The average annual benefits are as follows:

| Benefits | Amount (1 October 1985) |
|---|---|
| Flood Control | $7,656,400 |
| Recreation | 151,600 |
| Total | $7,808,000 |

4 FEB 1986

FISCAL YEAR 1987: The requested amount will be applied as follows:

| | |
|---|---|
| Initiate: Construction of Stage 1A Improvements | $ 823,000 |
| Engineering and Design | 450,000 |
| Supervision and Administration | 127,000 |
| Total | $1,400,000 |

The funds requested for FY 1987 are based on an economical rate of construction progress with completion of the entire project scheduled for July 1992.

NON-FEDERAL COST: Consistent with the cost-sharing and financing concepts agreed to by the administration and the Senate majority leadership, local interests will be required to provide lands, easements, and rights-of-way, presently estimated at $6,870,000; modify or relocate buildings, utilities, roads, and other facilities, except railroad bridges, where necessary in the construction of the project, presently estimated at $3,835,000; pay one-half of the separable and joint costs allocated to recreation development presently estimated at $325,000; during construction make an additional cash contribution to increase their share to 25 percent of total construction cost for flood control, presently estimated at $6,870,000 and bear all costs of operation, maintenance, and replacement of flood control facilities presently estimated at $161,900 annually.

STATUS OF LOCAL COOPERATION: By resolution dated 6 November 1981 and letter dated 17 August 1982, the city of Rochester expressed its intent to furnish the local cooperation requirements and be the local sponsor. By letter of agreement dated 18 October 1985, the city of Rochester has agreed to negotiate local cost-sharing consistent with the cost-sharing and financing concepts agreed to by the Administration and the Senate majority leadership.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $53,000,000 is an increase of $4,900,000 from the latest estimate ($48,100,000 - October 1984) presented to Congress. This change includes a decrease of $2,000,000 for adjustments in the estimated inflation allowance through the construction period. This decrease was more than offset by an increase of $6,900,000 based on a change in the proposed non-Federal cost-sharing requirements from 35 percent to 25 percent.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: An Environmental Impact Statement was filed with the Council on Environmental Quality on 19 September 1973. An updated draft statement was filed with the Environmental Protection Agency on 24 July 1978 and the updated final statement was submitted to the Environmental Protection Agency on 9 May 1979.

4 FEB 1986

The provisions of Section 404 of the Clean Water Act were met with the submission of an Environmental Impact Statement, including a Section 404(b)(1) Evaluation, to Congress on 27 April 1979.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1975.

The Soil Conservation Service (SCS) proposed a system of upstream reservoirs in their Watershed Plan dated April 1978. The SCS plan includes the installation of six single purpose flood prevention structures; three on Cascade Creek, one on Silver Creek and two on Willow Creek and one multiple-purpose flood prevention-recreation structure on Bear Creek. The SCS plan also includes recreation facilities and accelerated land treatment measures. The SCS structures would control 43.6 square miles of drainage area and provide storage of 8,545 acre-feet for floodwater, 3,430 acre-feet for sediment, and 795 acre-feet for recreation. The combined effect of the SCS and Corps project would provide greater than 200-year protection for the city. Without the SCS reservoirs, some areas of Rochester would have less than 100-year protection. Detailed design of the first reservoir is currently underway with construction scheduled to begin in FY 1987.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATES:

Division: North Central
District: St. Paul

Project: South Fork Zumbro River at Rochester, Minnesota

| Item | Estimates Presented to Congress ($1,000) | | | | |
|---|---|---|---|---|---|
| | Original Baseline (1) | Cumulative Changes (2) | Last (3) | Incremental Change (4) | Current (5) |
| Federal Cost | 37,200 | | 48,100 1/ | | 53,000 1/ 2/ |
| (Price Level) | (Jul 1973) | | (Oct 1984) | | |
| Reason for Change | | (10,900) 1/ | | (+4,900) 2/ | |
| a. Price Escalation | | 51,715 | | -2,000 | |
| b. Design Changes | | -19,847 | | 0 | |
| c. Additional Function Added Under General Authorization | | 415 | | 0 | |
| d. Authorized Modification | | 0 | | 0 | |
| e. Post-Contract Award and Other Estimating Adjustments | | -3,917 | | 0 | |
| f. Schedule Changes | | 0 | | 0 | |
| g. Sundry | | -17,466 | | +6,900 3/ | |
| h. Real Estate | | 0 | | 0 | |

1/ Includes an allowance for estimated inflation through the construction period.

2/ Includes a decrease of $2,000 for adjustments in the estimated inflation allowance through the construction period.

3/ Increase based on a change in the proposed non-Federal cost-sharing requirements from 35 percent to 25 percent.

REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: LOCAL PROTECTION (FLOOD CONTROL)

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 1986 AND 1987

| LINE NO | ITEM (a) | PROJECT COST ESTIMATE (b) | TOTAL TO 30 SEP 19 85 (c) | CURRENT FY 1986 (d) | BUDGET FY 1987 (e) | BALANCE TO COMPLETE AFTER FY 19 87 (f) |
|---|---|---|---|---|---|---|
| 1 | RELOCATIONS | 2,310,000 | | | 48,000 | 2,262,000 |
| 2 | FISH AND WILDLIFE FACILITIES | 130,000 | | | | 130,000 |
| 3 | CHANNELS | 45,996,000 | | | 775,000 | 45,221,000 |
| 4 | LEVEES | 3,525,000 | | | | 3,525,000 |
| 5 | RECREATION FACILITIES | 520,000 | | | | 520,000 |
| 6 | ENGINEERING AND DESIGN | 4,647,000 | 2,661,000 | 261,000 | 450,000 | 1,275,000 |
| 7 | SUPERVISION AND ADMINISTRATION | 3,067,000 | 192,000 | 16,000 | 127,000 | 2,732,000 |
| 8 | | | | | | |
| 9 | TOTAL APPLIED COST (Fed. Funds & | | | | | |
| 10 | Non-Fed. Contributions) | 60,195,000 | 2,853,000 | 277,000 | 1,400,000 | 55,665,000 |
| 11 | Undistributed Cost (None) | | | | | |
| 12 | TOTAL PROJECT COST (Fed. Funds & | | | | | |
| 13 | Non-Fed. Contributions) | 60,195,000 | 2,853,000 | 277,000 | 1,400,000 | 55,665,000 |
| 14 | Pending Adjustments (None) | | | | | |
| 15 | TOTAL COST (Fed. Funds & Non-Fed. | | | | | |
| 16 | Contributions) | 60,195,000 | 2,853,000 | 277,000 | 1,400,000 | 55,665,000 |
| 17 | | | | | | |
| 18 | FEDERAL FUNDS | | | | | |
| 19 | TOTAL APPLIED COST | 53,000,000 | 2,853,000 | 277,000 | 1,400,000 | 48,470,000 |
| 20 | Undistributed Cost (None) | | | | | |
| 21 | TOTAL PROJECT COST | 53,000,000 | 2,853,000 | 277,000 | 1,400,000 | 48,470,000 |
| 22 | Pending Adjustments (None) | | | | | |
| 23 | TOTAL COST | 53,000,000 | 2,853,000 | 277,000 | 1,400,000 | 48,470,000 |
| 24 | Undelivered Orders | | 14,000 | -14,000 | | |
| 25 | TOTAL OBLIGATIONS | | 2,867,000 | 263,000 | 1,400,000 | 48,470,000 |
| 26 | | | | | | |
| 27 | | | | | | |
| 28 | | | | | | |
| 29 | | | | | | |
| 30 | | | | | | |
| 31 | | | | | | |
| 32 | | | | | | |
| 33 | | | | | | |

| | | | |
|---|---|---|---|
| EFFECTIVE DATE<br>1 JAN 1986 | DIVISION NORTH CENTRAL<br>DISTRICT ST. PAUL | REGION UPPER MISSISSIPPI<br>BLACK-ROOT-<br>BASIN CHIPPEWA-WISCONSIN | PROJECT<br>SOUTH FORK ZUMBRO RIVER AT ROCHESTER, MINNESOTA |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986

REPORTS CONTROL SYMBOL: DAEN-CWB-13

| | |
|---|---|
| APPROPRIATION TITLE: CONSTRUCTION GENERAL | CLASSIFICATION: LOCAL PROTECTION (FLOOD CONTROL) |

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM (a) | PROJECT COST ESTIMATE (b) | TOTAL TO 30 SEP 19 85 (c) | CURRENT FY 19 86 (d) | BUDGET FY 19 87 (e) | BALANCE TO COMPLETE AFTER FY 19 87 (f) |
|---|---|---|---|---|---|---|
| 1 | NON-FEDERAL CONTRIBUTIONS | | | | | |
| 2 | TOTAL APPLIED COST | 7,195,000 | | | | 7,195,000 |
| 3 | Undistributed Cost (None) | | | | | |
| 4 | TOTAL PROJECT COST | 7,195,000 | | | | 7,195,000 |
| 5 | Pending Adjustment (None) | | | | | |
| 6 | TOTAL COST | 7,195,000 | | | | 7,195,000 |
| 7 | Undelivered Orders (None) | | | | | |
| 8 | TOTAL OBLIGATIONS | | | | | 7,195,000 |
| 9 | | | | | | |
| 10 | METHOD OF FINANCING | | | | | |
| 11 | FEDERAL FUNDS | | | | | |
| 12 | ALLOCATIONS | | 2,880,000 1/ | 250,000 2/ | | |
| 13 | UNOBLIGATED CARRY-OVER FROM PRIOR YEAR | | | 13,000 | | |
| 14 | TOTAL FUNDS AVAILABLE FOR OBLIGATION | | | 263,000 | | |
| 15 | APPROPRIATIONS REQUIRED | | | | 1,400,000 | 48,470,000 |
| 16 | | | | | | |
| 17 | NON-FEDERAL CONTRIBUTIONS | | | | | |
| 18 | CONTRIBUTIONS | | | | | |
| 19 | UNOBLIGATED CARRY-OVER FROM PRIOR YEAR | | | | | |
| 20 | TOTAL FUNDS AVAILABLE FOR OBLIGATION | | | | | |
| 21 | CONTRIBUTIONS REQUIRED | | | | | 7,195,000 |
| 22 | LANDS AND DAMAGES | | | | 712,000 | 6,158,000 |
| 23 | RELOCATIONS | | | | | 3,835,000 |
| 24 | TOTAL NON-FEDERAL COST | | | | 712,000 | 17,188,000 |
| 25 | | | | | | |
| 26 | 1/ Includes $951,000 appropriated under General Investigations. | | | | | |
| 27 | | | | | | |
| 28 | 2/ Appropriated under General Investigations. | | | | | |
| 29 | | | | | | |
| 30 | | | | | | |
| 31 | | | | | | |
| 32 | | | | | | |
| 33 | | | | | | |

| | | | |
|---|---|---|---|
| EFFECTIVE DATE<br>1 JAN 1986 | DIVISION NORTH CENTRAL<br>DISTRICT ST. PAUL | REGION UPPER MISSISSIPPI<br>BASIN BLACK-ROOT-CHIPPEWA-WISCONSIN | PROJECT<br>SOUTH FORK ZUMBRO RIVER AT ROCHESTER, MINNESOTA |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986

APPROPRIATION TITLE: Construction, General-Navigation (Fish and Wildlife)

PROJECT: Upper Mississippi River System Environmental Management Program (Continuing)

LOCATION: The project as described in the comprehensive Master Plan prepared by the Upper Mississippi River Basin Commission (report dated 1 Jan 1982) encompasses long term resources monitoring, habitat rehabilitation and enhancement projects, recreation improvements, and studies, traffic monitoring, and computerized inventory and analysis in the states of Illinois, Iowa, Minnesota, Missouri, and Wisconsin.

AUTHORIZATION: FY 85 Supplemental Appropriations Act, P.L. 99-88.

BENEFIT-COST RATIO: The remaining benefit-remaining cost ratio is not available because monetary benefits have not been quantified.

| SUMMARIZED FINANCIAL DATA | | Accum. % of Est. Fed. Cost | STATUS: (1 January 1986) | PERCENT COMPLETE | COMPLETION SCHEDULE |
|---|---|---|---|---|---|
| Estimated Federal Cost | $196,000,000 1/ | | Project Not Yet Started | | Indefinite 2/ |
| Estimated Non-Federal Cost | 1/ | | | | |
| Total Estimated Project Cost | $196,000,000 1/ | | | | |
| Allocations to 30 September 1985 | $ 30,000 | | | | |
| Conference Allowance for FY 1986 | 0 | | | | |
| Potential Allocation for FY 1986 | 970,000 | | | | |
| Potential Allocations through FY 1986 | 1,000,000 | 0 | | | |
| Allocations Requested for FY 1987 | 1,000,000 | 1 | | | |
| Scheduled Balance to Complete after FY 1987 | 89,725,000 | | | | |
| Unscheduled Balance to Complete after FY 1987 | 104,275,000 2/ | | | | |

1/ See non-Federal paragraph.

2/ Habitat and rehabilitation and enhancement projects are unscheduled pending development of priorities, execution of assurances, and reanalysis of results of the resource monitoring program, see non-federal paragraph.

JUSTIFICATION: Implementation of the Upper Mississippi River System Environmental Management Program UMRS-EMP is essential to the continued viability of the Upper Mississippi River System and important to the long-term public acceptance and support of the navigation project. Habitat Rehabilitation and Enhancement projects will help counteract the negative effects of natural and human-induced factors on the system's backwaters and side channels. Long-Term Resource Monitoring will determine in future years whether the habitat projects are working and indicate whether the river system is regaining its lost habitat or that degradation is continuing: Computerized Inventory and Analysis will allow for eventual computer analysis of the system's variables and provide multiple access for users in other Federal agencies, the states, universities, and others. Recreation projects will assure that the people will be able to enjoy and appreciate the recreational opportunities afforded by the Upper Mississippi River. Navigation Traffic Monitoring will help assure that the system is ready to meet the demands of the future. The assessment of the economic impacts of recreational activities in the Upper Mississippi River will determine the degree to which these expenditures affect the regional and national economics.

FISCAL YEAR 1987: The requested amount will be applied as follows:

| | |
|---|---|
| Continue: Long Term Resource Monitoring/Computer Inventory | $ 250,000 |
| Continue: Recreation Items | 200,000 |
| Continue: Early Action Construction | 400,000 |
| Engineering and Design | 100,000 |
| Supervision and Administration | 50,000 |
| Total | $1,000,000 |

Funds requested are based on an economical rate of progress.

NON-FEDERAL COSTS: As planning associated with the preparation of the project documents moves ahead, the specific outputs of the plan will become better defined. This is a prerequisite for applying appropriate cost sharing. The cost sharing formula will be that agreed to by the Administration and the Senate majority leadership for projects funded under P.L. 99-88. Non-Federal requirements will be 50 percent for recreation with local interests responsible for operation and maintenance. Fish and wildlife enhancement will be a Federal cost when the enhancement provides national benefits, including benefits to species that are identified by the National Marine Fisheries Service as of national economic importance, species that are subject to treaties or international convention to which the United States is a party, anadromous fish, or when such enhancement is designed to benefit species that have been listed as threatened or endangered by the Secretary of the Interior under terms of the Endangered Species Act, as amended. When benefits of enhancement do not qualify as national, 25 percent of the enhancement costs will be provided by non-Federal interests except when the benefits are limited to a single state in which case non-Federal interests will be required to contribute 33 1/3 percent.

STATUS OF LOCAL COOPERATION: Local cooperation agreements will be executed as required for implementation of specific habitat rehabilitation and enhancement, and recreation projects. The member states of the Upper Mississippi River Basin Association strongly support the project and are willing to participate in the protection and enhancement of the Upper Mississippi River system. Other Federal and State agencies have also endorsed the program.

COMPARISON OF FEDERAL COST ESTIMATE: The current Federal cost estimate of $196,000,000 is an increase of $21,000,000 over the latest estimate ($175,000,000 - Oct 83 price level) presented to Congress. This change includes increases of $7,000,000 based on higher price levels to 1 October 1985 and $14,000,000 for an estimated inflation allowance from 1 October 1985 through the construction period. Future budget submissions will reflect a reduction in Federal cost due to application of the cost-sharing principles agreed to by the Administration and the Senate majority leadership. (See Non-Federal Cost paragraph).

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT:

a. Status of Environmental Impact Statement: NEPA compliance will be accomplished prior to implementation of specific project construction.

b. Compliance with Clean Water Act: Clean Water Act compliance will be accomplished prior to implementation of specific project construction.

OTHER INFORMATION: None.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: North Central
District: Rock Island

Project: Upper Mississippi River System Environmental Management Program

| | Estimates Presented to Congress ($1,000) | | | | |
|---|---|---|---|---|---|
| Item | Original Baseline (1) | Cumulative Changes (2) | Last (3) | Incremental Change (4) | Current (5) |
| Federal Cost | $175,000 | | $175,000 | | $196,000 |
| (Price Level) | (Oct 83) | | (Oct 83) | | |
| Reason for Change | | 0 | | (21,000) | |
| a. Price Escalation | | 0 | | 21,000 1/ | |
| b. Design Changes | | 0 | | 0 | |
| c. Additional Function Added Under General Authorization | | 0 | | 0 | |
| d. Authorized Modification | | 0 | | 0 | |
| e. Post-Contract Award or Other Estimating Adjustments | | 0 | | 0 | |
| f. Schedule Changes | | 0 | | 0 | |
| g. Sundry | | 0 | | 0 | |
| h. Real Estate | | 0 | | 0 | |

1/ Includes $14,000 for estimated inflation from 1 October 1985 through the construction period.

REPORTS CONTROL SYMBOL: DAEN-CWB-13

| | |
|---|---|
| APPROPRIATION TITLE: CONSTRUCTION GENERAL | CLASSIFICATION: NAVIGATION |

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM (a) | PROJECT COST ESTIMATE (b) | TOTAL TO 30 SEP 19 85 (c) | CURRENT FY 19 86 (d) | BUDGET FY 19 87 (e) | BALANCE TO COMPLETE AFTER FY 19 87 (f) |
|---|---|---|---|---|---|---|
| 1 | FISH AND WILDLIFE | $154,240,000 | 0 | $ 430,000 | $ 650,000 | $153,160,000 |
| 2 | RECREATION | 5,250,000 | 0 | 180,000 | 200,000 | 4,870,000 |
| 3 | ENGINEERING AND DESIGN | 29,250,000 | 0 | 310,000 | 100,000 | 28,840,000 |
| 4 | SUPERVISION AND ADMINISTRATION | 7,260,000 | 0 | 80,000 | 50,000 | 7,130,000 |
| 5 | | | | | | |
| 6 | TOTAL APPLIED COST (Federal Funds Only) | 196,000,000 | 0 | 1,000,000 | 1,000,000 | 194,000,000 |
| 7 | Undistributed Costs (None) | | | | | |
| 8 | TOTAL PROJECT COST (Federal Funds Only) | 196,000,000 | 0 | 1,000,000 | 1,000,000 | 194,000,000 |
| 9 | Pending Adjustments (None) | | | | | |
| 10 | TOTAL COSTS (Federal Funds Only) | 196,000,000 | 0 | 1,000,000 | 1,000,000 | 194,000,000 |
| 11 | | | | | | |
| 12 | | | | | | |
| 13 | FEDERAL FUNDS | | | | | |
| 14 | TOTAL APPLIED COSTS | 196,000,000 | 0 | 1,000,000 | 1,000,000 | 194,000,000 |
| 15 | Undistributed Costs (None) | | | | | |
| 16 | TOTAL PROJECT COSTS | 196,000,000 | 0 | 1,000,000 | 1,000,000 | 194,000,000 |
| 17 | Pending Adjustments (None) | | | | | |
| 18 | TOTAL COSTS | 196,000,000 | 0 | 1,000,000 | 1,000,000 | 194,000,000 |
| 19 | Undelivered Orders | | 0 | | | |
| 20 | TOTAL OBLIGATIONS | | 0 | 1,000,000 | 1,000,000 | 194,000,000 |
| 21 | | | | | | |
| 22 | | | | | | |
| 23 | NON-FEDERAL CONTRIBUTIONS | 1/ | | | | |
| 24 | | | | | | |
| 25 | METHOD OF FINANCING | | | | | |
| 26 | FEDERAL FUNDS | | | | | |
| 27 | Allocations | | 30,000 | 970,000 | | |
| 28 | Unobligated Carryover from Prior Year | | | 30,000 | | |
| 29 | Total Funds Available for Obligation | | | 1,000,000 | | |
| 30 | Appropriations Required | | | | 1,000,000 | 194,000,000 |
| 31 | | | | | | |
| 32 | 1/ See non-Federal paragraph on Justification Sheet. | | | | | |
| 33 | | | | | | |

| | | | |
|---|---|---|---|
| EFFECTIVE DATE<br>1 JAN 86 | DIVISION NORTH CENTRAL<br>DISTRICT ROCK ISLAND | REGION UPPER MISSISSIPPI<br>BASIN ROCK-MISS-DES MOINES | PROJECT UPPER MISSISSIPPI RIVER SYSTEM ENVIRONMENTAL MANAGEMENT PROGRAM |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986

**APPROPRIATION TITLE:** Construction General - Small Boat Harbor (Harbor-of-Refuge)

**PROJECT:** Port Ontario Harbor, New York (Continuing)

**LOCATION:** Port Ontario Harbor is located in the State of New York, Oswego County, on the southeasterly shore of Lake Ontario at the mouth of Salmon River, 19 miles northeasterly of Oswego Harbor, New York.

**AUTHORIZATION:** 1945 R&H Act (HD 446/78/2) and Fiscal Year (FY) 85 Supplemental Appropriations Act (Public Law (PL) 99-88).

**BENEFIT TO COST RATIO:** The remaining benefit-remaining cost ratio is not avaliable because monetary benefits have not been quantifie-. The project was justified and authorized as a harbor-of-refuge without a benefit/cost ratio analysis.

**SUMMARIZED FINANCIAL DATA:**

| | | | Accum. % of Est. Fed. Cost |
|---|---|---|---|
| Estimated Federal Cost | | $2,760,000 | |
| Estimated Non-Federal Cost | | 2,070,000 | |
| Cash Contribution | $1,760,000 | | |
| Other | 310,000 | | |
| Total Estimated Project Cost | | $4,830,000 | |
| Allocations to 30 September 1985 | | 770,000 1/ | |
| Conference Allowance for FY 1986 | | 0 | |
| Potential Allocations for FY 1986 | | 240,000 2/ | |
| Potential Allocations to date | | 1,010,000 | 37 |
| Allocations Requested for Fy 1987 | | 800,000 | 66 |
| Scheduled Balance to Complete after FY 1987 | | 950,000 | |
| Unscheduled Balance to Complete after FY 1987 | | 0 | |

| STATUS: (1 January 1986) | Completion Schedule |
|---|---|
| Not Started | December 1987 |

**PHYSICAL DATA:** The project provides for a harbor-of-refuge for shallow-draft vessels. Features include two breakwaters, an entrance channel 8 feet deep, and an inner channel 6 feet deep. A public wharf is to be constructed by local interests on the south side of the Salmon River at Selkirk Shores State Park in the vicinity of Pine Grove.

1/ Includes $10,000 allocated from FY 85 Supplement.
2/ Remaining funds allocated from FY 85 Supplement.

Division: North Central
District: Buffalo
Region: Great Lakes
Port Ontario Harbor, New York

4 FEB 1986

**JUSTIFICATION:** Port Ontario Harbor, New York, was authorized as one of 21 harbors-of-refuge for shallow-draft craft for the purpose of creating a chain of refuge harbors along the United States shores of the Great Lakes. The principal difficulties attending navigation of the Great Lakes by light-draft vessels arise from the severe storms and squalls which may be encountered at any time and from the absence of adequately protected harbors-of-refuge in certain sections. For this reason, Port Ontario Harbor was selected for establishment of a harbor-of-refuge for small craft at the easterly end of Lake Ontario to increase safety for small craft navigating between Oswego Harbor, New York, 19 miles southwesterly, and Sackets Harbor, New York, 32 miles northeasterly of Port Ontario. In addition, the authorized improvements will provide for additional small-boat activities, such as charter boat (commercial) fishing, in the area. The project is located in Oswego County which has been designated as a redevelopment area under Title IV, Section 401(a)(1) of PL 89-136.

**BENEFITS:** Plan of improvement was authorized as a small craft harbor-of-refuge and provides for increased safety to navigation for small recreational craft and charter boat (commercial) fishing without a benefit analysis.

**FISCAL YEAR 1987:** The requested amount of $800,000 will be applied as follows:

| | |
|---|---|
| Breakwaters | $741,000 |
| Engineering and Design | 8,000 |
| Supervision and Administration | 51,000 |
| Total | $800,000 |

**NON-FEDERAL COST:** Consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, local interests are required to provide lands, easements, rights-of-way, a public wharf and required disposal areas, presently estimated at $310,000; modify or relocate buildings, utilities, roads, and other facilities, where necessary in the construction of the project, pay one-half of the separable and joint costs allocated to recreational navigation and approximately 20 percent of the separable and joint costs allocated to commerical navigation based on the use of facilities methodology, presently estimated at $1,760,000 and bear all costs of operation, maintenance, and replacement of recreation facilities, presently estimated at $73,800 annually. Local interests will be required to make payments and voluntary contributions concurrently with project construction or repay their share of construction costs over the life of the project.

**STATUS OF LOCAL COOPERATION:** A Letter of Intent from the local cooperator. New York Office of Parks, Recreation and Historic Preservation (NYSOPR&HP), was dated 7 April 1980 in which they state: "We intend to advance this project as a State sponsored program...We have been prepared to undertake appropriate land acquisitions in support of the harbor-of-refuge."

Formal assurances were requested on 17 November 1980. By letter dated 27 January 1982, the District Engineer, by direction, requested the unexecuted LCA be returned. By letter dated 2 February 1982, NYSOPR&HP returned the unexecuted LCA.

An 18 July 1985 Administrtion/Senate Majority Leadership Compromise proposed cost-sharing on recreational navigation to be 50/50 (Federal/Non-Federal). The local sponsor was notified/contacted of this proposal by Buffalo District letter dated 2 August 1985, and a meeting held at Albany, New York, on 19 August 1985. The Assistant Secretary of the Army (Civil Works) on 19 November 1985 stated that there was no objection to the cost sharing between Federal and non-Federal being based on the use of facilities methodology.

An unsigned draft Letter of Assurance (LOA), reflecting the new cost-sharing, based on the use of facilities methodology, was transmitted to the Office of the Chief of Engineers (OCE) on 25 November 1985 for their review and was approved on 26 November 1985. The local sponsor was sent the LOA on 5 December 1985 and will sign this letter when necessary and will, prior to construction, enter into a binding written agreement which addresses project construction and will be consistent with the agreement between the Administration and Senate Majority Leadership.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal (Corps of Engineers) cost estimate of $2,760,000 is a decrease of $2,450,000 over the latest estimate ($5,210,000, October 1983) presented to Congress. The change includes increases of $152,000 based on higher price levels to 1 October 1985; $70,000 for an estimated inflation allowance from 1 October 1985 through the construction period, and decreases of $1,010,000 based on more detailed plans and estimates (decreased crest width and dredging quantities), $152,000 in Engineering and Design and Supervision and Administration based on a reanalysis of requirements and $1,510,000 for reduction in the Federal cost-sharing.

STATUS OF ENVIRONMENTAL STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The Final Environmental Impact Statement was filed with the Environmental Protection Agency on 9 November 1979.

The provisions of Section 404 of the Clean Water Act were met by a Section 404(b)(1) Evaluation, 21 August 1979; a Public Notice, 26 April 1978; and the District Commander's signature on the Phase I General Design Memorandum on 31 May 1979.

OTHER INFORMATION: Rights-of-way will be formally requested upon execution of the Local Cooperation Agreement. There were problems anticipated in obtaining the necessary rights-of-way. These problems being attributable to the fear by some affected property owners of invasion of privacy from people wishing to gain access to the breakwaters and determining the ownership of accreted land on the south side of the river. Thus, litigation was brought against New York State regarding land acquisition. The suit has been settled in favor of the State and acquisition procedures are now underway.

OTHER INFORMATION (Cont'd):

Based on DAEN-CWR letter dated 13 September 1985, subject: Interim Policy Guidance for Project Contained in FY 1985 Supplemental Appropriations Act, cost sharing will be based on cost allocated to basic project purposes and shared on the same percentage basis as construction cost for each purpose. In the case of Port Ontario, there are two types of benefits: recreational boating and commerical navigation. Since a benefit-cost analysis is not available to allocate costs to project purposes, a use-of-facilities methodology will be used to allocate costs. The analysis, which was concurred with by the Assistant Secretary of the Army (Civil Works) on 19 November 1985, was performed and has demonstrated that the Non-Federal cash contribution is estimated at approximately 40 percent of the total first cost for construction of the recreational and commercial navigation features.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

**Division:** North Central
**District:** Buffalo

**Project:** Port Ontario Harbor, New York

Estimates Presented to Congress ($1,000)

| Item | Original Baseline (1) | Cumulative Changes (2) | Last (3) | Incremental Change (4) | Current (5) |
|---|---|---|---|---|---|
| Federal Cost | 3,530 | | 5,210 | | 2,760 1/ |
| (Price Level) | (Oct 1974) | | (Oct 1983) | | |
| Reason for Change | | (1,680) | | (-2,450) 1/ | |
| a. Price Escalation | | 2,680 | | 222 | |
| b. Design Changes | | 1,394 | | -1,010 | |
| c. Additional Function Added Under General Authorization | | 0 | | 0 | |
| d. Authorized Modification | | 0 | | 0 | |
| e. Post Contract Award and Other Estimating Adjustments | | 394 | | -152 2/ | |
| f. Schedule Changes | | 0 | | 0 | |
| g. Sundry | | 0 | | -1,510 3/ | |
| h. Real Estate | | 0 | | 0 | |

1/ Includes $70 allowance for estimated inflation from 1 October 1985 through the construction period.
2/ Includes decreases of $9 for Engineering and Design and $143 for Supervision and Administration based on a reanalysis of requirements.
3/ Decrease based on cost sharing and financing concepts reflected in S. 1567.

REPORTS CONTROL SYMBOL: DAEN-CWB-13

| | |
|---|---|
| APPROPRIATION TITLE: CONSTRUCTION GENERAL | CLASSIFICATION: CHANNELS AND HARBORS (NAVIGATION) |

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM | PROJECT COST ESTIMATE | TOTAL TO 30 SEP 19 85 | CURRENT FY 19 86 | BUDGET FY 19 87 | BALANCE TO COMPLETE AFTER FY 19 87 |
|---|---|---|---|---|---|---|
| | (a) | (b) | (c) | (d) | (e) | (f) |
| 1 | 2 March 1945 River and Harbors Act | | | | | |
| 2 | (HD 446/78/2) | | | | | |
| 3 | | | | | | |
| 4 | CHANNELS | 440,000 | 0 | 0 | 0 | 440,000 |
| 5 | BREAKWATERS | 3,035,000 | 0 | 798,000 | 1,482,000 | 755,000 |
| 6 | ENGINEERING AND DESIGN | 735,000 | 695,000 | 20,000 | 15,000 | 5,000 |
| 7 | SUPERVISION AND ADMINISTRATION | 310,000 | 65,000 | 62,000 | 103,000 | 80,000 |
| 8 | | | | | | |
| 9 | TOTAL APPLIED COST (CofE Funds & | | | | | |
| 10 | Non-Fed. Contrib.) | 4,520,000 | 760,000 | 880,000 | 1,600,000 | 1,280,000 |
| 11 | Undistributed Costs (None) | | | | | |
| 12 | TOTAL PROJECT COST (CofE Funds & | | | | | |
| 13 | Non-Fed. Contrib.) | 4,520,000 | 760,000 | 880,000 | 1,600,000 | 1,280,000 |
| 14 | Pending Adjustments (None) | | | | | |
| 15 | TOTAL COST (CofE Funds & Non-Fed. | | | | | |
| 16 | Contrib.) | 4,520,000 | 760,000 | 880,000 | 1,600,000 | 1,280,000 |
| 17 | | | | | | |
| 18 | FEDERAL FUNDS | | | | | |
| 19 | TOTAL APPLIED COST | 2,760,000 | 760,000 | 250,000 | 800,000 | 950,000 |
| 20 | Undistributed Cost (None) | | | | | |
| 21 | TOTAL PROJECT COST | 2,760,000 | 760,000 | 250,000 | 800,000 | 950,000 |
| 22 | Pending Adjustments (None) | | | | | |
| 23 | TOTAL COST | 2,760,000 | 760,000 | 250,000 | 800,000 | 950,000 |
| 24 | Undelivered Orders | | 0 | 0 | | |
| 25 | TOTAL OBLIGATIONS | | 760,000 | 250,000 | 800,000 | 950,000 |
| 26 | | | | | | |
| 27 | | | | | | |
| 28 | | | | | | |
| 29 | | | | | | |
| 30 | | | | | | |
| 31 | | | | | | |
| 32 | | | | | | |
| 33 | | | | | | |

| | | | |
|---|---|---|---|
| EFFECTIVE DATE 1 JAN 86 | DIVISION NORTH CENTRAL<br>DISTRICT BUFFALO | REGION GREAT LAKES<br>BASIN EASTERN LAKE ONTARIO | PROJECT PORT ONTARIO, NEW YORK |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986

REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: CHANNELS AND HARBORS (NAVIGATION)

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM (a) | PROJECT COST ESTIMATE (b) | TOTAL TO 30 SEP 19 85 (c) | CURRENT FY 19 86 (d) | BUDGET FY 19 87 (e) | BALANCE TO COMPLETE AFTER FY 19 87 (f) |
|---|---|---|---|---|---|---|
| 1 | NON-FEDERAL CONTRIBUTIONS | | | | | |
| 2 | TOTAL APPLIED COST | 1,760,000 | 0 | 630,000 | 800,000 | 330,000 |
| 3 | Undistributed Cost (None) | | | | | |
| 4 | TOTAL PROJECT COST | 1,760,000 | 0 | 630,000 | 800,000 | 330,000 |
| 5 | Pending Adjustments (None) | | | | | |
| 6 | TOTAL COST | 1,760,000 | 0 | 630,000 | 800,000 | 330,000 |
| 7 | Undelivered Orders (None) | | | 0 | | |
| 8 | TOTAL OBLIGATIONS | | | 630,000 | 800,000 | 330,000 |
| 9 | | | | | | |
| 10 | METHOD OF FINANCING | | | | | |
| 11 | FEDERAL FUNDS | | | | | |
| 12 | Allocations | | 770,000 | 240,000 | | |
| 13 | Unobligated carryover from prior year | | | +10,000 | | |
| 14 | Total funds available for obligation | | | 250,000 | | |
| 15 | Appropriations required | | | | 800,000 | 950,000 |
| 16 | | | | | | |
| 17 | NON-FEDERAL FUNDS | | | | | |
| 18 | Cash Contributions | | 0 | 630,000 | | |
| 19 | Unobligated carryover from prior year | | | 0 | | |
| 20 | Total funds available for obligation | | | 630,000 | | |
| 21 | Cash Contributions required | | | | 800,000 | 330,000 |
| 22 | Other Costs | | | | | |
| 23 | Lands and Damages | | | 75,000 | | |
| 24 | Other (Public Wharf) | | | | | 235,000 |
| 25 | Total Non-Federal Costs | | | 705,000 | 800,000 | 565,000 |
| 26 | | | | | | |
| 27 | | | | | | |
| 28 | | | | | | |
| 29 | | | | | | |
| 30 | | | | | | |
| 31 | | | | | | |
| 32 | | | | | | |
| 33 | | | | | | |

| | | | |
|---|---|---|---|
| EFFECTIVE DATE<br>1 JAN 86 | DIVISION NORTH CENTRAL<br>DISTRICT BUFFALO | REGION GREAT LAKES<br>BASIN EASTERN LAKE ONTARIO | PROJECT<br>PORT ONTARIO, NEW YORK |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986

APPROPRIATION TITLE: Construction General - Commercial/Recreational Navigation

PROJECT: Cleveland Harbor, OH (Continuing)

LOCATION: Cleveland Harbor is located at the city of Clevelar[illegible]ga County, Ohio, on the southern shore of Lake Erie; 96 miles east of Toledo, Ohio and 176 miles southwest of [illegible] New York.

AUTHORIZATION: The Cleveland Herbor Reformulation Phase I General Design Memorandum on Commercial Navigation needs was authorized by Section 175 of the 1976 Water Resources Development Act, HD 1744/94/2, and the project was included in the FY 85 Supplemental Appropriations Act (Public Law (PL) 99-88).

BENEFIT TO COST RATIO: The remaining benefit - remaining cost ratio is 1.7 to 1 at 8-1/8 percent. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds for the commerical navigation portion of the overall project (FY 1985) was 1.4 to 1 (8-1/8 percent). A benefit-cost ratio for the recreational navigation features must still be determined.

| SUMMARIZED FINANCIAL DATA: | | | | Accum. % of Est. Fed. Cost |
|---|---|---|---|---|
| Estimated Total Appropriation Requirement | | | $5,850,000 | |
| Scheduled Construction | | $3,000,000 | | |
| Unscheduled Construction | | 2,850,000 | | |
| Future Non-Federal Reimbursement | | | 170,000 | |
| Scheduled Construction | | 170,000 | | |
| Unscheduled Construction | | 0 | | |
| Estimated Federal Cost (Ultimate) | | | 5,680,000 | |
| Scheduled Construction | | 2,830,000 | | |
| Unscheduled Construction | | 2,850,000 | | |
| Estimated Non-Federal Cost | | | 4,650,000 | |
| Scheduled Construction | | 1,800,000 | | |
| Cash Contribution | $1,000,000 | | | |
| Dike Disposal Costs | 630,000 | | | |
| Reimbursements: | 170,000 | | | |
| Commerical Navigation | 170,000 | | | |

| STATUS: (1 January 1986) | Completion Schedule |
|---|---|
| Commercial Navigation: | |
| Not Started | September 1987 |
| Recreational Navigation | Unscheduled |

Division: North Central District: Buffalo Region: Great Lakes
Cleveland Harbor, Ohio

4 FEB 1986

SUMMARIZED FINANCIAL DATA: (Cont'd)

|  |  |  |  |  | Accum. % of Est. Fed. Cost |
|---|---|---|---|---|---|
| Estimated Non-Federal Cost (Cont'd) |  |  |  |  |  |
| Unscheduled Construction |  | 2,850,000 |  |  |  |
| Cash Contribution | 2,850,000 |  |  |  |  |
| Total Estimated Scheduled Construction Cost |  |  | 4,630,000 |  |  |
| Total Estimated Unscheduled Construction Cost |  |  | 5,700,000 |  |  |
| Total Estimated Project Cost |  |  | 10,330,000 |  |  |
| Allocations to 30 September 1985 |  |  | 15,000 | 1/ |  |
| Conference Allowance for FY 1986 |  |  | 0 |  |  |
| Potential Allocations for FY 1986 |  |  | 400,000 | 1/2/ |  |
| Potential Allocations to date |  |  | 415,000 | 1/ | 7 |
| Allocation Requested for FY 1987 |  |  | 2,700,000 | 3/4/ | 55 |
| Scheduled Balance to Complete after FY 1987 |  |  | 0 |  |  |
| Unscheduled Balance to Complete after FY 1987 |  |  | 2,735,000 |  |  |

1/ Funds allocated from FY 85 Supplement.
2/ Based on the current project schedule.
3/ Includes $2,530,000 for remaining Federal share of commercial navigation and $170,000 the local sponsor is permitted to finance over a 30 year period after construction completion.
4/ Obligation and expenditure of budgeted funds for construction of this project are contingent upon enactment of legislation enabling recovery of all or part of the costs to be expended by the project sponsor and the Federal Government in accordance with the agreement between the Administration and Senate Majority Leadership.

PHYSICAL DATA: The commercial navigation portion of the overall project include a fan-shaped entrance channel deepened to 31 feet LWD at the existing east entrance; a 500-foot wide interior channel through the east basin deepened to 27 feet LWD; and raising the crest elevation of Dike Site 14 to contain the polluted dredged material resulting from the project.

The recreational navigation portion of the overall project includes: 100-foot wide access and interior channels for small boats around Pier 34, repairs and improvements to Pier 34, and any required protective structures as determined by future engineering studies to reduce unacceptable wave action in the Inner Harbor. Associated features of the project, to be constructed by the Ohio Department of Natural Resources, include: (a) creation of a new 7.4 acre inner lake south of Pier 34 to be used as a mooring basin for transient boats and as a focal point of landside development; (b) marina construction; and, (c) a pedestrian bridge. Significant landside development by local interests (aquarium, maritime museum, retail marketplace, city park, winter garden, etc.) is also planned.

JUSTIFICATION: The fundamental commercial navigation need at Cleveland Harbor is to move bulk and general cargo more efficiently and economically through the harbor. There are also hazards to navigation which must be dealt with.

Local shipping interests support modification of the Lakefront Harbor for increased vessel efficiency and development of a "severe-weather" entrance. Support for modifying the east entrance is due primarily to safety considerations in that vessels could enter the east entrance during storm conditions under full power and still have sufficient maneuvering room to reduce their speed (vessel delay savings). In addition, vessels will experience time savings by using the East Channel to enter and depart from the lakefront (transit time savings). Modifying the east entrance would also decrease the possibility of vessels striking physical obstacles.

The average annual benefits for the commerical navigation features are $520,100 at 8-1-1/8 percent.

The Cleveland downtown lakefront represents a significantly underutilized development opportunity. While the lakefront has been the subject of numerous planning studies and development ideas, minimal development activity has taken place since the Great Lakes Exposition of 1936 and 1937.

With an ongoing downtown building "boom", improved water quality in the Lake and a nationwide focus on waterfront development (Boston, New York, Baltimore, Norfolk, Toronto), Cleveland is again looking to its lakefront as a major underutilized resource and asset.

Analysis to date indicates the recreational navigation portion of the overall project will generate significant benefits in terms of: a project open to the entire Cleveland community, a place where City residents can meet and come together, entrepreneurial opportunities, jobs, payrolls, and taxes.

FISCAL YEAR 1987: The requested amount of $2,700,000 will be applied as follows:

| | |
|---|---|
| Channels | $2,475,000 |
| Engineering and Design | 11,000 |
| Supervision and Administration | 214,000 |
| Total | $2,700,000 |

NON-FEDERAL COST: Consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, local interests are required to provide lands, easements, rights-of-way, and required disposal areas, presently estimated at $630,000, modify or relocate buildings, utilities, roads, and other facilities, except railroad bridges, where necessary in the construction of the project, pay one-half of the separable and joint costs allocated to recreation, presently estimated at $2,850,000, bear all costs of operation, maintenance, and replacement of all recreation facilities, pay 25 percent of the costs allocated to deep draft navigation during construction, presently estimated at $1,000,000, and pay an additional 4 percent of the costs allocated to deep draft navigation within a period of 30 years following completion, presently estimated at $170,000. Local interests will be required to make payments and voluntary contributions concurrently with project construction or repay their share of construction costs over the life of the project.

STATUS OF LOCAL COOPERATION: Draft letters of assurance were received for the commerical navigation portion of the overall project and the recreational navigation portion of the overall project (Pier 34/Inner Harbor) from the local sponsor (Cleveland - Cuyahoga County Port Authority) on 6 September 1985 and 16 September 1985, respectively. Each letter constitutes an expression of intent by the Port Authority to cooperate with the Federal Government in initiating planning for construction of the subject project using Fiscal Year 85 Supplemental Funding. A Section 221 Agreement (Local Cooperation Agreement) will be executed prior to advertisement of the construction contracts.

Rights-of-way will be requested upon execution of the Local Cooperation Agreement with acquisition prior to construction contract advertisement.

COMPARISON OF FEDERAL COST ESTIMATES: The current cost estimate of $5,850,000 is a decrease of $207,000 from the last estimate ($6,057,000, Oct 83) presented to Congress. This change includes increases of $353,000 based on higher price levels to 1 October 1985; $450,000 for an estimated inflation allowance from 1 October 1985 through the construction period, and decreases of $40,000 in Supervision and Administration based on a reanalysis of requirements and $ 970,000 in Federal cost sharing for commercial navigation per S.1567. The cost estimate reflects cost-sharing and financing requirements as agreed to by the Administration and the Senate Leadership and as reported by Senate Environment and Public Works Committee, 18 July 1985. Cost includes $2,830,000 for the commercial navigation portion of the overall project and $2,850,000 for the recreational navigation portion of the overall project.

STATUS OF ENVIRONMENTAL STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT:

a. Commercial Navigation Portion of the Overall Project.

The Final EIS (prepared during the preauthorization feasibility study) was filed with EPA on 3 November 1978. A Final Supplement to the Final EIS was filed with the Environmental Protection Agency on 29 April 1985. A Section 404(b)(1) Evaluation was not required.

## STATUS OF ENVIRONMENTAL STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: (Cont'd)

### b. Recreational Navigation Portion of the Overall Project (Pier 34/Inner Harbor)

At this time, it appear that an EIS may not required for the recreational navigation portion of the overall project. In this event, an Environmental Assessment and a Finding of No Significant Impacts could be prepared. A Section 404(b)(1) Evaluation will also be prepared.

OTHER INFORMATION: The Cleveland Harbor, Ohio Feasibility Report for Harbor Modifications was completed June 1976. The Reformulation Phase I General Design Memorandum (GDM) for the commerical navigation portion of the overall project was submitted to North Central Division on 27 July 1984, the Division Engineer's Notice was issued 7 September 1984, the report of the Board of Engineers for River and Harbors was completed on 22 January 1985, and the Chief of Engineer's Report was signed on 27 August 1985. The Chief's Report is presently undergoing review by the Assistant Secretary of the Army for Civil Works. No Corps studies have been performed on the recreational navigation portion of the overall project. A Formulation Report for the recreational navigation portion of the overall project (Pier 34/Inner Harbor) is scheduled for completion in September 1986, and will address the basic plan and its associated benefits and costs.

At this point in time, the proposed commerical navigation portion of the overall project is not supported by the Lake Carriers Association but the local sponsor, the Cleveland - Cuyahoga County Port Authority, still show support.

The proposed plan for the Pier 34/Inner Harbor recreational navigation portion of the overall project can only be considered "conceptual" at this time. Considerable coordination with local interests to finalize the plan will be required before final design can be initiated. Congressional, State and City interests, in addition to community leaders, are extremely supportive of the recreational aspects of the project.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: North Central
District: Buffalo

Project: Cleveland Harbor, Ohio

| Item | Estimates Presented to Congress ($1,000) | | | | |
|---|---|---|---|---|---|
| | Original Baseline (1) | Cumulative Changes (2) | Last (3) | Incremental Change (4) | Current (5) |
| Federal Cost | 6,057 | | 6,057 | | 5,680 1/ |
| (Price Level) | (Oct 83) | | (Oct 83) | | |
| Reason for Change | | 0 | | -377 1/ | |
| a. Price Escalation | | 0 | | 783 | |
| b. Design Changes | | 0 | | 0 | |
| c. Additional Function Added Under General Authorization | | 0 | | 0 | |
| d. Authorized Modification | | 0 | | 0 | |
| e. Post-Contract Award and Other Estimating Adjustments | | 0 | | -40 2/ | |
| f. Schedule Changes | | 0 | | 0 | |
| g. Sundry | | 0 | | -1,120 3/ | |
| h. Real Estate | | 0 | | 0 | |

1/ Includes $430 allowance for estimated inflation from 1 October 1985 through the construction period.
2/ Decrease in Supervision and Administration based on a reanalysis of requirements.
3/ Decrease in Federal cost sharing per S. 1567.

REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: CHANNELS AND HARBORS (NAVIGATION)

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM (a) | PROJECT COST ESTIMATE (b) | TOTAL TO 30 SEP 19 85 (c) | CURRENT FY 19 86 (d) | BUDGET FY 19 87 (e) | BALANCE TO COMPLETE AFTER FY 19 87 (f) |
|---|---|---|---|---|---|---|
| 1 | 22 Oct 1976 Water Resources Development | | | | | |
| 2 | Act, HD 1744/94/2 and FY 1985 | | | | | |
| 3 | Supplemental Appropriations Act P.L. 99-88 | | | | | |
| 4 | | | | | | |
| 5 | CHANNELS | 3,550,000 | 0 | 175,000 | 3,375,000 | 0 |
| 6 | RECREATIONAL FACILITIES | 4,870,000 | 0 | 0 | 0 | 4,870,000 |
| 7 | ENGINEERING AND DESIGN | 605,000 | 0 | 260,000 | 11,000 | 334,000 |
| 8 | SUPERVISION AND ADMINISTRATION | 675,000 | 0 | 80,000 | 214,000 | 381,000 |
| 9 | | | | | | |
| 10 | TOTAL APPLIED COST (CofE Funds & | | | | | |
| 11 | Non-Fed. Contrib.) | 9,700,000 | 0 | 515,000 | 3,600,000 | 5,585,000 |
| 12 | Undistributed Costs (None) | | | | | |
| 13 | TOTAL PROJECT COST (CofE Funds & | | | | | |
| 14 | Non-Fed. Contrib.) | 9,700,000 | 0 | 515,000 | 3,600,000 | 5,585,000 |
| 15 | Pending Adjustments (None) | | | | | |
| 16 | TOTAL COST (CofE Funds & Non-Fed. | | | | | |
| 17 | Contrib.) | 9,700,000 | 0 | 515,000 | 3,600,000 | 5,585,000 |
| 18 | | | | | | |
| 19 | FEDERAL FUNDS | | | | | |
| 20 | TOTAL APPLIED COST | 5,680,000 | 0 | 415,000 | 2,700,000 [1] | 2,735,000 |
| 21 | Undistributed Cost (None) | | | | | |
| 22 | TOTAL PROJECT COST | 5,680,000 | 0 | 415,000 | 2,700,000 [1] | 2,735,000 |
| 23 | Pending Adjustments (None) | | | | | |
| 24 | TOTAL COST | 5,680,000 | 0 | 415,000 | 2,700,000 [1] | 2,735,000 |
| 25 | Undelivered Orders | | | | | |
| 26 | TOTAL OBLIGATIONS | | | 415,000 | 2,700,000 [1] | 2,735,000 |
| 27 | | | | | | |
| 28 | | | | | | |
| 29 | | | | | | |
| 30 | [1] Includes $2,530,000 for remaining Federal share of commercial navigation and $170,000 the local | | | | | |
| 31 | sponsor is permitted to finance over a 30 year period after construction completion. | | | | | |
| 32 | | | | | | |
| 33 | | | | | | |

| | | | |
|---|---|---|---|
| EFFECTIVE DATE<br>1 JAN 86 | DIVISION NORTH CENTRAL<br>DISTRICT BUFFALO | REGION GREAT LAKES<br>BASIN EASTERN LAKE ERIE | PROJECT<br>CLEVELAND HARBOR, OHIO |

REPORTS CONTROL SYMBOL: DAEN-CWB-13

**APPROPRIATION TITLE:** CONSTRUCTION GENERAL

**CLASSIFICATION:** CHANNELS AND HARBORS (NAVIGATION)

# SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM (a) | PROJECT COST ESTIMATE (b) | TOTAL TO 30 SEP 19 85 (c) | CURRENT FY 19 86 (d) | BUDGET FY 19 87 (e) | BALANCE TO COMPLETE AFTER FY 19 87 (f) |
|---|---|---|---|---|---|---|
| 1 | NON-FEDERAL CONTRIBUTIONS | | | | | |
| 2 | TOTAL APPLIED COST | 4,020,000 | 0 | 100,000 | 900,000 | 3,020,000 |
| 3 | Undistributed Cost (None) | | | | | |
| 4 | TOTAL PROJECT COST | 4,020,000 | 0 | 100,000 | 900,000 | 3,020,000 |
| 5 | Pending Adjustments (None) | | | | | |
| 6 | TOTAL COST | 4,020,000 | 0 | 100,000 | 900,000 | 3,020,000 |
| 7 | Undelivered Orders (None) | | | | | |
| 8 | TOTAL OBLIGATIONS | | 0 | 100,000 | 900,000 | 3,020,000 |
| 9 | | | | | | |
| 10 | METHOD OF FINANCING | | | | | |
| 11 | FEDERAL FUNDS | | | | | |
| 12 | Allocations | | 15,000 | 400,000 | | |
| 13 | Unobligated carryover from prior year | | | +15,000 | | |
| 14 | Total funds available for obligation | | | 415,000 | | |
| 15 | Appropriations required | | | | 2,700,000[2] | 2,735,000 |
| 16 | | | | | | |
| 17 | NON-FEDERAL FUNDS | | | | | |
| 18 | Cash Contributions | 4,020,000 | 0 | 100,000 | 900,000 | 3,020,000 |
| 19 | Unobligated carryover from prior year | | | | | |
| 20 | Total funds available for obligation | | | | | |
| 21 | Cash Contributions required | 4,020,000 | 0 | 100,000 | 900,000 | 3,020,000 |
| 22 | Other Costs | | | | | |
| 23 | Lands and Damages | 0 | 0 | 0 | 0 | 0 |
| 24 | Relocations | 0 | 0 | 0 | 0 | 0 |
| 25 | Other (Dike Disposal) | 630,000 | 0 | 0 | 0 | 630,000 |
| 26 | Total Non-Federal Costs | 4,650,000 | 0 | 100,000 | 900,000 | 3,650,000 |
| 27 | | | | | | |
| 28 | | | | | | |
| 29 | | | | | | |
| 30 | [2] Obligation and expenditure of budgeted funds for construction of this project are contingent upon | | | | | |
| 31 | enactment of legislation enabling recovery of all or part of the costs to be expended by the | | | | | |
| 32 | project sponsor and the Federal government. | | | | | |
| 33 | | | | | | |

| | | | |
|---|---|---|---|
| EFFECTIVE DATE<br>1 JAN 86 | DIVISION NORTH CENTRAL<br>DISTRICT BUFFALO | REGION GREAT LAKES<br>BASIN EASTERN LAKE ERIE | PROJECT<br>CLEVELAND HARBOR, OHIO |

ENG FORM 1 SEP 75 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986

PROJECT: Geneva-on-the-Lake, OH (Continuing)

LOCATION: Geneva-on-the-Lake, OH, is located in Ashtabula County on the south shore of Lake Erie, about 17 miles east of Fairport Harbor and 12 miles west of Ashtabula Harbor.

AUTHORIZATION: 1965 Flood Control Act, Section 201 (HD 402/91/2), Resolution by the Senate Public Works Committee on 17 December 1970. Resolution by the House Public Works Committee on 15 December 1970. Fiscal Year (FY) [illegible]5 Supplemental Appropriations Act (Public Law (PL) 99-88).

BENEFIT TO COST RATIO: The remaining benefit - remaining cost ratio is 1.7 to 1 at 8-1/8 percent. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1985) was 1.3 to 1 (8-1/8 percent). The benefit-cost ratio was based on the project functioning independently.

SUMMARIZED FINANCIAL DATA:

| | | | Accum. % of Est. Fed. Cost |
|---|---|---|---|
| Estimated Federal Cost | | $4,610,000 | |
| Estimated Non-Federal Cost | | 4,610,000 | |
| Cash Contribution | $4,390,000 | | |
| Other | 220,000 | | |
| Total Estimated Project Cost | | $9,220,000 | |
| Allocations to 30 September 1985 | | 1,015,000 1/ | |
| Conference Allowance for FY 1986 | | 0 | |
| Potential Allocations for FY 1986 | | 250,000 2/ | |
| Potential Allocations to date | | 1,250,000 | 27 |
| Allocations Requested for FY 1987 | | 1,500,000 | 60 |
| Scheduled Balance to Complete after FY 1987 | | 1,845,000 | |
| Unscheduled Balance to Complete after FY 1987 | | 0 | |

| STATUS: (1 January 1986) | Completion Schedule |
|---|---|
| Not Started | September 1988 |

PHYSICAL DATA: The plan consist of 1,350 lineal feet of rubblemound breakwaters, entrance channel 730 lineal feet and 9 feet deep. Service channels totalling 1,500 lineal feet and 6 feet deep, 0.5 acre mooring area 6 feet deep, recreational fishing facilities consisting of a concrete walkway and handrailing on the east breakwater and a wetland mitigation plan to replace 4.2 acres of wetland and a 2.5 acre pond lost due to project construction.

1/ Includes $15,000 allocated from FY 85 Supplemental Act

2/ Based on current project schedule and consists of remaining funds allocated from FY 85 Supplement Act.

JUSTIFICATION: Geneva-on-the-Lake State Park has no accommodations for recreational craft traffic. The State of Ohio has purchased 466 acre for park development and is planning to include a recreational craft harbor in its plans. The park is ideally located for a harbor-of-refuge. The nearest harbors are located at Fairport, OH, 17 miles west and Ashtabula, OH, 12 miles, east; both are Federally improved deep-draft harbors. Construction of a recreational craft harbor is necessary to provide protected accommodations for permanent berthing and to service the general interest of safe navigation.

| Benefits | Amount (1 October 1985) |
|---|---|
| Recreational Navigation | $1,021,900 |
| Harbor-of-Refuge (Navigation) | 27,200 |
| Recreational Fishing | 41,700 |
| Total | $1,090,800 |

FISCAL YEAR 1987: The requested amount of $1,500,000 will be applied as follows:

| | |
|---|---|
| Channels | $ 165,000 |
| Breakwaters | 1,175,000 |
| Recreational Facilities | 57,000 |
| Engineering and Design | 14,000 |
| Supervision and Administration | 89,000 |
| Total | $1,500,000 |

NON-FEDERAL COST: Consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, local interests are required to provide lands, easements, rights-of-way, and required disposal areas, presently estimated at $220,000; modify or relocate buildings, utilities, roads, and other facilities, where necessary in the construction of the project, pay one-half of the separable and joint costs allocated to recreational navigation and fishing, presently estimated at $4,120,000, and bear all costs of operation, maintenance, and replacement of recreation facilities, presently estimated at $42,700 annually; pay 50 percent of the separable and joint costs allocated to fish and wildlife enhancement and mitigation, presently estimated at $270,000, and bear all costs of operation, maintenance, and replacement of fish and wildlife facilities presently estimated at $9,400 annually. Local interests will be required to make payments and voluntary contributions concurrently with project construction or repay their share of construction costs over the life of the project.

STATUS OF LOCAL COOPERATION: The State of Ohio Department of Natural Resources (ODNR) is the responsible agency and indicated its willingness and ability to furnish local assurances on 24 July 1969 and 16 March 1972. Ohio Department of Natural Resources, by letters dated 10 November 1977, 15 April 1981 and 10 September 1982 provided an updated "Letter of Intent" to provide items of local cooperation and reemphasized their support of the project.

During a meeting held on 15 August 1985, ODNR again indicated their intent to sign a Local Cooperation Agreement for this project in keeping with new cost sharing and operation and maintenance requirements.

ODNR furnished a signed letter of Assurance on 8 October 1985 which states that ODNR is the agency empowered by law in the State of Ohio to provide the non-Federal cooperation required for the Geneva-on-the-Lake project, and prior to construction will enter into a binding written agreement, consistent with the provisions of State law, with appropriate representatives of the Corps of Engineers, which addresses project construction and will be consistent with the agreement between the Administration and Senate Majority Leadership.

COMPARISON OF FEDERAL COST ESTIMATES: The current cost estimate of $4,610,000 is a decrease of $100,000 from the last estimate ($4,710,000, Oct 83) presented to Congress. This change includes increases of $172,000 based on higher price levels to 1 October 1985; $120,000 for an estimated inflation allowance from 1 October 1985 through the construction period; decreases of $462,000 due to decrease of breakwater stone, channel dredging and recreational features, $60,000 in Engineering and Design and Supervison and Administration based on a reanalysis of requirements and an increase of $130,000 based on change in cost sharing requirements consistent with concepts agreed to by the Administration and Senate Majority Leadership.

STATUS OF ENVIRONMENTAL STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The draft Environmental Impact Statement (EIS) was submitted to the Environmental Protection Agency on 8 May 1981. The Final Environmental Impact Statement was submitted to the Environmental Protection Agency on 9 October 1981. The Final EIS addressed all environmental concerns.

The provisions of Section 404 of the Clean Water Act were met by a Section 404(b)(1) Evaluation, a Public Notice, a Certification from the State of Ohio, and the District Commander's signature on the Phase I General Design Memorandum report on 25 August 1981.

The Supplement to the Final EIS and the Record of Decision are scheduled for approval/signature by the Division Commander in March 1986.

OTHER INFORMATION: The authorized project called for a dock channel and maneuvering area located landward of the beach area. Part of the location of that channel is presently occupied by the parking lot servicing the Geneva State Park bathhouse. Formulation studies indicated that the dock channel should be reoriented (and "flipped") 180 degrees in relation to the entrance channel. That course of action indicated that the dock channel would encroach on an existing pond and wetland area developed during construction of the parking lot. Then a wetland mitigation plan was developed and agreed upon. Funds to initiate preconstruction planning were appropriated in FY 78.

Based on project construction costs derived in the Phase II General Design Memorandum, the local sponsor, ODNR, had requested that Buffalo District (NCB) consider an alternative harbor layout in order to reduce project construction costs. NCB, ODNR, and U.S. Fish and Wildlife Service (USF&WS) have developed new cost estimates and mitigation plans for a revised final harbor layout. The revised harbor layout will result in additional mitigation plans and, thus, environmental report requirements. A Section 404 Evaluation, Public Notice, and a Supplemental Report to the Final Environmental Impact Statement will be prepared prior to project construction.

Local interests and State Agencies are in favor of the revised design for the small boat harbor project at Geneva-on-the-Lake, OH. No known opposition exists.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

**Division:** North Central
**District:** Buffalo
**Project:** Geneva-on-the-Lake, Ohio

| | Estimates Presented to Congress ($1,000) | | | | |
|---|---|---|---|---|---|
| Item | Original Baseline (1) | Cumulative Changes (2) | Last (3) | Incremental Change (4) | Current (5) |
| Federal Cost | 1,420 | | 4,710 | | 4,610 1/ |
| (Price Level) | (Oct 76) | | (Oct 83) | | |
| Reason for Change | | (3,290) | | (-100) 1/ | |
| a. Price Escalation | | 1,003 | | 292 | |
| b. Design Changes | | 2,057 | | -462 | |
| c. Additional Function Added Under General Authorization | | 0 | | 0 | |
| d. Authorized Modification | | 0 | | 0 | |
| e. Post-Contract Award and Other Estimating Adjustments | | 380 | | -60 2/ | |
| f. Schedule Changes | | 0 | | 0 | |
| g. Sundry | | -150 | | 130 | |
| h. Real Estate | | 0 | | 0 | |

1/ Includes $120 allowance for estimated inflation from 1 October 1985 through the construction period.
2/ Decrease of $60 for Engineering and Design and Supervision and Administration based on reanalynis of requirements.

REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: CHANNELS AND HARBORS (NAVIGATION)

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM (a) | PROJECT COST ESTIMATE (b) | TOTAL TO 30 SEP 19 85 (c) | CURRENT FY 19 86 (d) | BUDGET FY 19 87 (e) | BALANCE TO COMPLETE AFTER FY 19 87 (f) |
|---|---|---|---|---|---|---|
| 1 | 1965 Flood Control Act, Section 201 | | | | | |
| 2 | (HD 402/91/2), Resolution by the Senate | | | | | |
| 3 | Public Works Committee on 17 December | | | | | |
| 4 | 1970, Resolution by the House Public | | | | | |
| 5 | Works Committee on 15 December 1970 | | | | | |
| 6 | | | | | | |
| 7 | CHANNELS | 3,750,000 | 0 | 0 | 330,000 | 3,420,000 |
| 8 | BREAKWATERS | 3,560,000 | 0 | 890,000 | 2,350,000 | 320,000 |
| 9 | RECREATIONAL FACILITIES | 115,000 | 0 | 0 | 115,000 | 0 |
| 10 | ENGINEERING AND DESIGN | 989,000 | 899,000 | 55,000 | 28,000 | 7,000 |
| 11 | SUPERVISION AND ADMINISTRATION | 586,000 | 94,000 | 77,000 | 177,000 | 238,000 |
| 12 | | | | | | |
| 13 | TOTAL APPLIED COST (CofE Funds & | | | | | |
| 14 | Non-Fed. Contrib.) | 9,000,000 | 993,000 | 1,022,000 | 3,000,000 | 3,985,000 |
| 15 | Undistributed Costs (None) | | | | | |
| 16 | TOTAL PROJECT COST (CofE Funds & | | | | | |
| 17 | Non-Fed. Contrib.) | 9,000,000 | 993,000 | 1,022,000 | 3,000,000 | 3,985,000 |
| 18 | Pending Adjustments (None) | | | | | |
| 19 | TOTAL COST (CofE Funds & Non-Fed. | | | | | |
| 20 | Contrib.) | 9,000,000 | 993,000 | 1,022,000 | 3,000,000 | 3,985,000 |
| 21 | | | | | | |
| 22 | FEDERAL FUNDS | | | | | |
| 23 | TOTAL APPLIED COST | 4,610,000 | 993,000 | 272,000 | 1,500,000 | 1,845,000 |
| 24 | Undistributed Cost (None) | | | | | |
| 25 | TOTAL PROJECT COST | 4,610,000 | 993,000 | 272,000 | 1,500,000 | 1,845,000 |
| 26 | Pending Adjustments (None) | | | | | |
| 27 | TOTAL COST | 4,610,000 | 993,000 | 272,000 | 1,500,000 | 1,845,000 |
| 28 | Undelivered Orders | | 0 | 0 | | |
| 29 | TOTAL OBLIGATIONS | | 993,000 | 272,000 | 1,500,000 | 1,845,000 |
| 30 | | | | | | |
| 31 | | | | | | |
| 32 | | | | | | |
| 33 | | | | | | |

| | | | |
|---|---|---|---|
| EFFECTIVE DATE 1 JAN 86 | DIVISION NORTH CENTRAL<br>DISTRICT BUFFALO | REGION GREAT LAKES<br>BASIN EASTERN LAKE ERIE | PROJECT GENEVA-ON-THE-LAKE, OHIO |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986

REPORTS CONTROL SYMBOL: DAEN-CWB-13

| | |
|---|---|
| APPROPRIATION TITLE: CONSTRUCTION GENERAL | CLASSIFICATION: CHANNELS AND HARBORS (NAVIGATION) |

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM | PROJECT COST ESTIMATE | TOTAL TO 30 SEP 19 85 | CURRENT FY 19 86 | BUDGET FY 19 87 | BALANCE TO COMPLETE AFTER FY 19 87 |
|---|---|---|---|---|---|---|
| | (a) | (b) | (c) | (d) | (e) | (f) |
| 1 | NON-FEDERAL CONTRIBUTIONS | | | | | |
| 2 | TOTAL APPLIED COST | 4,390,000 | 0 | 750,000 | 1,500,000 | 2,140,000 |
| 3 | Undistributed Cost (None) | | | | | |
| 4 | TOTAL PROJECT COST | 4,390,000 | 0 | 750,000 | 1,500,000 | 2,140,000 |
| 5 | Pending Adjustments (None) | | | | | |
| 6 | TOTAL COST | 4,390,000 | 0 | 750,000 | 1,500,000 | 2,140,000 |
| 7 | Undelivered Orders (None) | | | 0 | | |
| 8 | TOTAL OBLIGATIONS | | | 750,000 | 1,500,000 | 2,140,000 |
| 9 | | | | | | |
| 10 | METHOD OF FINANCING | | | | | |
| 11 | FEDERAL FUNDS | | | | | |
| 12 | Allocations | | 1,015,000 | 250,000 | | |
| 13 | Unobligated carryover from prior year | | | +22,000 | | |
| 14 | Total funds available for obligation | | | 272,000 | | |
| 15 | Appropriations required | | | | 1,500,000 | 1,845,000 |
| 16 | | | | | | |
| 17 | NON-FEDERAL FUNDS | | | | | |
| 18 | Cash Contributions | | 0 | 750,000 | | |
| 19 | Unobligated carryover from prior year | | | 0 | | |
| 20 | Total funds available for obligation | | | 750,000 | | |
| 21 | Cash Contribution required | | | | 1,500,000 | 2,140,000 |
| 22 | Other Costs | | | | | |
| 23 | Lands and Damages | | | 220,000 | 0 | 0 |
| 24 | Total Non-Federal Costs | | | 970,000 | 1,500,000 | 2,140,000 |
| 25 | | | | | | |
| 26 | | | | | | |
| 27 | | | | | | |
| 28 | | | | | | |
| 29 | | | | | | |
| 30 | | | | | | |
| 31 | | | | | | |
| 32 | | | | | | |
| 33 | | | | | | |

| | | | |
|---|---|---|---|
| EFFECTIVE DATE 1 JAN 86 | DIVISION NORTH CENTRAL<br>DISTRICT BUFFALO | REGION GREAT LAKES<br>BASIN EASTERN LAKE ERIE | PROJECT GENEVA-ON-THE-LAKE, OHIO |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986

APPROPRIATION TITLE: Construction, General - Beach Erosion Control

PROJECT: Presque Isle Peninsula, Erie, Pennsylvania (Continuing)

LOCATION: Presque Isle Peninsula is located in the city of Erie, Erie County, Pennsylvania, on the south shore of Lake Erie about 78 miles southwest of Buffalo, New York, and about 102 miles northeast of Cleveland, Ohio.

AUTHORIZATION: 1954 and 1960 River and Harbor Acts
1974 and 1976 Water Resources Development Acts

BENEFIT TO COST RATIO: The remaining benefit-remaining cost ratio is not applicable because both initial construction and initial beach nourishment are complete. No economic reanalysis was made for the 1974 and 1976 Water Resources Development Acts which extended Federal cost participation of the beach nourishment program.

| SUMMARIZED FINANCIAL DATA | | | Accum. % of Est. Fed. Cost |
|---|---|---|---|
| Estimated Federal Cost | | $16,291,000 | |
| Estimated Non-Federal Cost | | 8,550,000 | |
| Cash Contribution | $7,701,000 | | |
| Other Costs 1/ | 849,000 | | |
| Total Estimated Project Cost | | $24,841,000 | |
| Allocations to 30 September 1985 | | 11,436,000 | |
| Conference Allowance for FY 1986 | | 1,160,000 | |
| Allocations for FY 1986 | | 1,135,000 2/ | |
| Allocations to Date | | 12,571,000 | 77 |
| Allocations Requested for FY 87 | | 1,210,000 | 84 |
| Scheduled Balance to Complete after FY 1987 | | 2,510,000 | |
| Unscheduled Balance to Complete after FY 1986 | | 0 | |

| STATUS: (1 January 1986) | Percent Complete | Completion Schedule |
|---|---|---|
| 1954 R&H Act | 100 | |
| 1960 R&H Act | 100 | |
| 1974 WRD Act | 100 | |
| 1976 WRD Act | 54 | |
| Entire Project | 70 | June 1989 |

1/ Non-Federal cost for beach nourishment operations as authorized by the 1960 R&H Act. Actual work was undertaken by the Commonwealth of Pennsylvania with the Federal Government reimbursing the State for its share of the cost.
2/ Reflects $25,000 reduction assigned as Savings and Slippage and transfer of those funds to Irondequoit Bay.

Division: North Central District: Buffalo Region: Great Lakes

4 FEB 1986

PHYSICAL DATA:

1954 R&H Act
Seawall, Groins, and Beach Restoration: Restoration of beaches with sand fill and construction of seawall and groins to reduce erosion.

1960 R&H Act
Beach Replenishment: Authorized Federal cost participation for periodic sand nourishment of the peninsula shore to restore the beach areas. This authorization expired in May 1971.

1974 WRD Act
Continuation of Beach Replenishment: Reinstatement and a five-year time extension of Federal cost participation for periodic peninsula beach nourishment as provided in the 1960 R&H Act. This authorization expired March 1979.

1976 WRD Act
Continuation of Beach Replenishment: The 1976 WRD Act authorized periodic beach nourishment in accordance with the 1962 R&H Act, at the expiration of the authorization provided by the 1974 WRD Act. It is anticipated that implementation of the structural modifications, authorized for the phase I design memorandum stage of advanced engineering and design by the 1976 WRD Act, will reduce annual nourishment, as presently being accomplished.

JUSTIFICATION: Presque Isle Peninsula, a sand spit projecting from the mainland shore, has a lake shoreline over nine miles long. A large bay between the peninsula and the mainland provides a spacious harbor which has been improved by the Federal Government under the navigation project for Erie Harbor. The peninsula provides valuable protection to the harbor. Presque Isle State Park, comprising about 3,200 acres, occupies practically the entire peninsula. The park is popular for bathing, boating, fishing, and other forms of outdoor recreation. In the past ten years, an average of over 4,200,000 visitors per year have had free and unrestricted access to the park. The peninsula lake shore is exposed to wave attack that causes recession of the shoreline and erosion of the sand beach. On several occasions, the narrow neck of the peninsula was breached by storm wave action. The supply of beach material from bluffs and streams has been insufficient to replace eroded material. The River and Harbor Act of 1954 provided for artificial placement of sand fill, construction of a seawall, a bulkhead, and a groin system to protect against erosion. Studies of sand movement after construction of the protective structures confirmed the necessity for periodic nourishment to maintain a suitable protective and recreational beach.

FISCAL YEAR 1987: The requested amount will be applied as follows:

Continue Beach Replenishment Program - $1,210,000

NON-FEDERAL COST: The Commonwealth of Pennsylvania has expended $3,983,000 for its share of the cooperative beach erosion control project (1954 and 1960 R&H Acts and 1974 WRD Act).

In addition to a cash contribution, local interests are also required, to provide all lands, easements, and rights-of-way necessary for construction and to maintain and operate the non-Federal features of the project and pay 30 percent of the ongoing annual beach redistribution and replenishment costs (1976 WRD Act) at a total estimated cost of $4,567,000.

Local interests have also expended over $3,500,000 for development and protection of the State Park on the peninsula.

STATUS OF LOCAL COOPERATION: Assurances of local cooperation, between the Federal Government and the Department of Forests and Waters, Commonwealth of Pennsylvania, for the completed project were contained in an agreement dated 19 August 1960. An agreement, for the work authorized by the 1974 WRD Act, between the Department of Environmental Resources, Commonwealth of Pennsylvania, and the Corps of Engineers was consummated on 7 January 1975. An agreement between the United States of America and the Commonwealth of Pennsylvania, acting through the Department of Environmental Resources, was finalized on 21 February 1979 for the annual nourishment extended by the 1976 Water Resources Development Act.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate, $16,291,000 is a decrease of $155,000 over the last estimate ($16,446,000) presented to Congress. This change includes an increase of $3,000 for adjustments in the estimated inflation allowance through the construction period, and decreases of $133,000 based on a reanalysis of Supervision and Adminstration requirements and $25,000 assigned as savings and slippage and transfer of those funds to the Irondequoit Bay project.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: An Environmental Impact Statement was filed with the Council on Environmental Quality on 17 February 1972 for the work completed under authority of the 1954 and 1960 Rivers and Harbors Acts. No Environmental Impact Statement is required for the work authorized by the 1974 Water Resources Development Act since an environmental assessment revealed that there are no significant environmental impacts. This determination and environmental assessment, set forth in a statement of findings completed in March 1975, is available to the public. A recent review of the environmental assessment determined that the findings are still valid for the work authorized by the 1976 WRD Act. Therefore, an Environmental Impact Statement is not required.

The provisions of Section 404 of the Clean Water Act have been met for the work undertaken in 1985 by a Section 404(b)(1) Evaluation dated 8 January 1985, a public notice issued on 9 January 1985 and a certification issued by the Commonwealth of Pennsylvania on 27 February 1985.

The provisions of Section 404 of the Clean Water Act for the work scheduled in FY 1986 will be met by a Section 404b(1) Evaluation, issuance of a public notice and a certification from the Commonwealth of Pennsylvania within the second quarter of FY 86.

OTHER INFORMATION: Federal participation in the cost of the beach nourishment program by the Commonwealth of Pennsylvania for a period of ten years was authorized by the 1960 R&H Act. The authorization expired in May 1971 and completion funds were appropriated by Congress in FY 1971. In FY 1975, Congress appropriated construction funds to initiate the 5-year extension of the nourishment program as authorized by the 1974 Water Resources Development Act. The 1976 Water Resource Development Act, in addition to extending Federal participation in the beach nourishment program, authorized a Legislative Phase 1 GDM to develop a permanent solution to the severe beach erosion problem. The plan recommended in the GDM consists of constructing 58 rubblemound breakwaters located offshore along the lakeward length of Presque Isle Peninsula, beach replenishment with sand fill, and periodic sand nourishment to maintain a beach berm.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: North Central
District: Buffalo

Project: Presque Isle Peninsula, Erie, Pennsylvania

| | Estimates Presented to Congress ($1,000) | | | | |
|---|---|---|---|---|---|
| Item | Original Baseline (1) | Cumulative Changes (2) | Last (3) | Incremental Change (4) | Current (5) |
| Federal Cost | 5,646 | | 16,446 1/ | | 16,291 1/3/ |
| (Price Level) | (Jul 1972) | | (Oct 84) | | |
| Reason for Change | | (10,800) 1/ | | (-155) 3/ | |
| a. Price Escalation | | 2,622 | | 3 | |
| b. Design Changes | | 0 | | 0 | |
| c. Additional Function Added Under General Authorization | | 0 | | 0 | |
| d. Authorized Modification | | 9,196 2/ | | 0 | |
| e. Post-Contract Award and Other Estimating Adjustments | | -1,018 | | -133 4/ | |
| f. Schedule Changes | | 0 | | 0 | |
| g. Sundry | | 0 | | - 25 5/ | |
| h. Real Estate | | 0 | | 0 | |

1/ Includes an allowance for estimated inflation through the construction period.

2/ The 1976 WRD Act authorized continued beach nourishment, increase is for extension of program from March 1979 to June 1989.

3/ Includes an increase of $3 for adjustments in the estimated inflation allowance through the construction period.

4/ Decrease based on reanalysis of S&A requirement.

5/ Decrease assigned as savings and slippage and transfer of those funds to the Irondequoit Bay Project.

REPORTS CONTROL SYMBOL: DAEN-CWB-13

| | |
|---|---|
| APPROPRIATION TITLE: CONSTRUCTION GENERAL | CLASSIFICATION:<br>BEACH EROSION CONTROL |

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM<br>(a) | PROJECT COST ESTIMATE<br>(b) | TOTAL TO 30 SEP 19 85<br>(c) | CURRENT FY 19 86<br>(d) | BUDGET FY 19 87<br>(e) | BALANCE TO COMPLETE AFTER FY 19 87<br>(f) |
|---|---|---|---|---|---|---|
| 1 | COMPLETED MODIFICATIONS | | | | | |
| 2 | 1954 and 1960 R&H ACTS AND 1974 WRD ACT | 9,629,000 | 9,629,000 | | | |
| 3 | REMAINING MODIFICATIONS | | | | | |
| 4 | 1976 WRD ACTS | 15,212,000 | 8,192,000 | 1,711,000 | 1,728,000 | 3,581,000 |
| 5 | | | | | | |
| 6 | TOTAL PROJECT COST | 24,841,000 | 17,821,000 | 1,711,000 | 1,728,000 | 3,581,000 |
| 7 | FEDERAL SHARE OF TOTAL COSTS | 16,291,000 | 11,416,000 | 1,155,000 | 1,210,000 | 2,510,000 |
| 8 | NON-FEDERAL SHARE OF TOTAL COSTS | 8,550,000 | 6,405,000 | 556,000 | 518,000 | 1,071,000 |
| 9 | | | | | | |
| 10 | FEDERAL FUNDS | | | | | |
| 11 | TOTAL APPLIED COST | 16,291,000 | 11,416,000 | 1,155,000 | 1,210,000 | 2,510,000 |
| 12 | Undistributed Cost (None) | | | | | |
| 13 | TOTAL PROJECT COST | 16,291,000 | 11,416,000 | 1,155,000 | 1,210,000 | 2,510,000 |
| 14 | Pending Adjustments (None) | | | | | |
| 15 | TOTAL COST | 16,291,000 | 11,416,000 | 1,155,000 | 1,210,000 | 2,510,000 |
| 16 | Undelivered Orders | | +3,000 | -3,000 | | |
| 17 | TOTAL OBLIGATIONS | | 11,419,000 | 1,152,000 | 1,210,000 | 2,510,000 |
| 18 | | | | | | |
| 19 | NON-FEDERAL CONTRIBUTIONS | | | | | |
| 20 | TOTAL APPLIED COST | 8,550,000 | 6,405,000 | 556,000 | 518,000 | 1,071,000 |
| 21 | Undistributed Cost (None) | | | | | |
| 22 | TOTAL PROJECT COST | 8,550,000 | 6,405,000 | 556,000 | 518,000 | 1,071,000 |
| 23 | Pending Adjustments (None) | | | | | |
| 24 | TOTAL COST | 8,550,000 | 6,405,000 | 556,000 | 518,000 | 1,071,000 |
| 25 | Undelivered Orders | | 0 | 0 | | |
| 26 | TOTAL OBLIGATIONS | | 6,405,000 | 556,000 | 518,000 | 1,071,000 |
| 27 | | | | | | |
| 28 | | | | | | |
| 29 | | | | | | |
| 30 | | | | | | |
| 31 | | | | | | |
| 32 | | | | | | |
| 33 | | | | | | |

| | | | |
|---|---|---|---|
| EFFECTIVE DATE<br>1 JAN 86 | DIVISION NORTH CENTRAL<br>DISTRICT BUFFALO | REGION GREAT LAKES<br>BASIN EASTERN LAKE ERIE | PROJECT<br>PRESQUE ISLE PENINSULA, ERIE, PA |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986

REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: BEACH EROSION CONTROL

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM | PROJECT COST ESTIMATE | TOTAL TO 30 SEP 19 85 | CURRENT FY 19 86 | BUDGET FY 19 87 | BALANCE TO COMPLETE AFTER FY 19 87 |
|---|---|---|---|---|---|---|
|  | (a) | (b) | (c) | (d) | (e) | (f) |
| 1 | METHOD OF FINANCING |  |  |  |  |  |
| 2 | FEDERAL FUNDS |  |  |  |  |  |
| 3 | Allocations |  | 11,436,000 | 1,135,000 [1] |  |  |
| 4 | Unobligated carryover from prior year |  |  | 17,000 |  |  |
| 5 | Total funds available for obligation |  |  | 1,152,000 |  |  |
| 6 | Appropriations required |  |  |  | 1,210,000 | 2,510,000 |
| 7 |  |  |  |  |  |  |
| 8 | NON-FEDERAL FUNDS |  |  |  |  |  |
| 9 | Cash Contributions |  | 6,464,000 | 497,000 |  |  |
| 10 | Unobligated carryover from prior year |  |  | 59,000 |  |  |
| 11 | Total funds available for obligation |  |  | 556,000 |  |  |
| 12 | Cash Contributions required |  |  |  | 518,000 | 1,071,000 |
| 13 | Other Costs |  | 0 | 0 | 0 | 0 |
| 14 | Total Non-Federal Costs |  |  | 556,000 | 518,000 | 1,071,000 |
| 15 |  |  |  |  |  |  |
| 16 |  |  |  |  |  |  |
| 17 |  |  |  |  |  |  |
| 18 |  |  |  |  |  |  |
| 19 | [1] Reflects $25,000 reduction assigned as Savings and Slippage and transfer of those funds |  |  |  |  |  |
| 20 | to the Irondequoit Bay project. |  |  |  |  |  |
| 21 |  |  |  |  |  |  |
| 22 |  |  |  |  |  |  |
| 23 |  |  |  |  |  |  |
| 24 |  |  |  |  |  |  |
| 25 |  |  |  |  |  |  |
| 26 |  |  |  |  |  |  |
| 27 |  |  |  |  |  |  |
| 28 |  |  |  |  |  |  |
| 29 |  |  |  |  |  |  |
| 30 |  |  |  |  |  |  |
| 31 |  |  |  |  |  |  |
| 32 |  |  |  |  |  |  |
| 33 |  |  |  |  |  |  |

| | | | |
|---|---|---|---|
| EFFECTIVE DATE 1 JAN 86 | DIVISION NORTH CENTRAL<br>DISTRICT BUFFALO | REGION GREAT LAKES<br>BASIN EASTERN LAKE ERIE | PROJECT PRESQUE ISLE PENINSULA, ERIE, PA |

ENG FORM 1 SEP 78 2290 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986

APPROPRIATION TITLE: Construction, General - Local Protection (Flood Control)

PROJECT: Rockford, Illinois (Continuing)

LOCATION: The city of Rockford, in Winnebago County, is located along both banks of the Rock River in north central Illinois, about 17 miles south of the Illinois-Wisconsin state boundary. The Rock River flows through the center of the city, from north to south, dividing the city into east and west sections, roughly equal in size, both of which contain important residential, industrial, and commercial areas. Within the city of Rockford, the two principal tributaries entering the Rock River are Kent Creek from the west and Keith Creek from the east.

AUTHORIZATION: 1962 Flood Control Act

BENEFIT-COST RATIO: The remaining benefit-remaining cost ratio is not applicable because the project is nearing completion. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1973) was 2.8 to 1. The benefit-cost ratio was based on the project functioning independently.

| SUMMARIZED FINANCIAL DATA | | | | Accum. % of Est. Fed. Cost |
|---|---|---|---|---|
| Estimated Federal Cost | | $10,140,000 | | |
| Estimated Non-Federal Cost | | 6,430,000 | | |
| Cash Contribution | $ 0 | | | |
| Other | 6,430,000 | | | |
| Total Estimated Project Cost | | $16,570,000 | | |
| Allocations to 30 September 1985 | | 8,404,000 | | |
| Conference Allowance for FY 1986 | | 1,600,000 | | |
| Allocation for FY 1986 | | 350,000 | 1/ | |
| Allocations to Date | | 8,754,000 | | 86 |
| Allocation Requested for FY 1987 | | 950,000 | | 96 |
| Scheduled Balance To Complete after FY 1987 | | 436,000 | | |
| Unscheduled Balance to Complete after FY 1987 | | 0 | | |

1/ Reflects $300,000 reduction assigned as Savings and Slippage and $950,000 transfer from the project.

| STATUS: (1 January 1986) | PERCENT COMPLETE | COMPLETION SCHEDULE |
|---|---|---|
| Dam, Unit A, Stage I | 100 | |
| Relocations | 91 | Jul 1986 |
| Channels | 61 | Dec 1987 |
| Entire Project | 82 | Dec 1987 |

PHYSICAL DATA

Page Park:
Dam - Rolled Earth
Height - 36 Feet
Length - 3,670 feet
Outlet Works 3.5 ft. x 3.5 ft. reinforced concrete conduit
Spillway - Concrete broad-crested weir
Width - 204 feet
Crest Elevation - 773.0 Feet
Reservoir
Flood Control - 2,050 Acre-Feet
Channels:
North Branch Channel Improvement - 12,000 ft.
South Branch and Main Stem Improve. - 8,500 ft.
Relocations: Rip-rap railroad bridge embankment ($130,000)

Division: North Central District: Rock Island Region: Upper Mississippi

Rockford, Illinois

4 FEB 1986

JUSTIFICATION: The project will provide a high degree of flood protection against Kent Creek floods for the city of Rockford, population 139,712 (1980 census). The area to be protected along the North and South Branches of Kent Creek contains 368 acres and has been extensively developed for transportation, industrial, commercial, public, and residential purposes. These developments have been seriously affected during past major floods which occurred in June 1926, January 1946, June 1947, July 1952, and April 1973. The flood of July 1952 resulted in damages of $1,190,000. During this flood, 1,000 persons were displaced from their homes. With current prices and development, a recurrence of the July 1952 flood on Kent Creek would cause an estimated $7,672,000 in damages. With current prices and development, a recurrence of the April 1973 flood on Kent Creek would cause an estimated $5,315,000 in damages.

In the event of occurrence of the design flood and the lack of emergency measures, $18,450,000 in damages would result. Construction of the project would prevent occurrence of these damages. The average annual benefits, all flood control, are estimated at $1,747,100 at 1 October 1985 prices.

FISCAL YEAR 1987: The requested amount will be applied as follows:

| | |
|---|---|
| Initiate: Construction of Channels, Unit B, Stage IIIC, South Branch Cleanout | 900,000 |
| Engineering and Design | 12,000 |
| Supervision and Administration | 38,000 |
| Total | $950,000 |

Funds requested are based on an economical rate of construction with completion scheduled for December 1987.

NON-FEDERAL COST: Local interests are required to furnish all lands, easements, and rights-of-way; accomplish all relocations and alterations of buildings, utilities, sewers, and other facilities, except railroad bridges, ramps, and approaches thereto, necessary for construction of the project, and prescribe and enforce regulations to prevent encroachment on the improved channels and ponding areas. The investment required of local interests in construction of the authorized project is broken down as follows:

| | |
|---|---|
| Lands and Damages | $4,400,000 |
| Relocations (Roads, Utilities, and Buildings) | 2,030,000 |
| | $6,430,000 |

Local interests are also required to operate and maintain the project upon completion. It is estimated that the average annual expenditure for operation and maintenance will total $11,000.

STATUS OF LOCAL COOPERATION: By letter dated 7 August 1973, the City Engineer forwarded the local cooperation agreements, executed by the Mayor and City Clerk, and the resolution of the City Council passed on 11 June 1973, which authorized execution of the agreements. The resolution contains a proviso that a plan for moving the dam with the dry reservoir upstream from Page Park shall be held open as an option for further study. This plan was presented in Supplement No. 1, Dry Reservoir, approved by the Office of the Chief of Engineers on 5 September 1975, and a revised local cooperation agreement was requested from the city. On 7 October 1975, the Mayor and the City Clerk executed Supplement No. 1 to the Local Cooperation Agreement in accordance with an authorizing resolution by the City Council. Both agreements were approved on behalf of the Secretary of the Army on 3 December 1975. By letters dated 4 August 1981 and 2 December 1981, the Mayor reaffirmed the city's intention to proceed with the remaining phases of the project. All rights-of-way for the project have been made available, except for Stage IIIC Channel Cleanout which is scheduled for October 1986.

COMPARISON OF FEDERAL COST ESTIMATE: The current Federal cost estimate of $10,140,000 is a decrease of $360,000 from the latest estimate ($10,500,000), presented to Congress. This change includes decreases of $329,000 based on more detailed planning of construction, $24,000 for Supervision and Administration based on a recent reanalysis of requirements, and $7,000 for adjustments in the estimated inflation allowance through the construction period.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT:

a. Status of Environmental Impact Statement: The final Environmental Impact Statement was filed with the Council on Environmental Quality on 21 July 1975.

b. Compliance with Clean Water Act: The provisions of Section 404 of the Clean Water Act have been met by a Section 404 (b)(1) Evaluation, a Public Notice issued on 12 September 1978, a Certification issued by the State of Illinois on 2 April 1979, and the District Commander's signature on the Section 404 Evaluation Report on 16 May 1979.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1968 and funds to initiate construction were appropriated in FY 1973. Award of the Unit B, Stage IIIC, South Branch Channel Cleanout contract has been delayed one year due to the City's inability to provide the necessary Rights-of-Way. This is the last work item to complete the project. Award is currently scheduled for November 1986 based on the City's estimate as to when ROW will be available.

4 FEB 1986

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: North Central
District: Rock Island

Project: Rockford, Illinois

| Item | Estimates Presented to Congress ($1,000) | | | | |
|---|---|---|---|---|---|
| | Original Baseline (1) | Cumulative Changes (2) | Last (3) | Incremental Change (4) | Current (5) |
| Federal Cost<br>(Price Level) | 3,300<br>(Oct 1971) | | 10,500 1/ | | 10,140 1/ 2/ |
| Reason for Change | | (7,200) 1/ | | (-360) 2/ | |
| a. Price Escalation | | 4,359 | | - 7 | |
| b. Design Changes | | 1,010 | | 0 | |
| c. Additional Function Added Under General Authorization | | 0 | | 0 | |
| d. Authorized Modification | | 0 | | 0 | |
| e. Post-Contract Award and Other Estimating Adjustments | | 1,837 | | -353 3/ | |
| f. Schedule Changes | | 0 | | 0 | |
| g. Sundry | | -6 | | 0 | |
| h. Real Estate | | 0 | | 0 | |

1/ Includes an allowance for estimated inflation through the construction period.

2/ Includes a decrease of $7 for adjustments in the estimated inflation allowance through the construction period.

3/ Includes decreases of $329 based on more detailed planning of construction and $24 for Supervision and Administration based on a recent reanalysis of requirements.

4 FEB 1986

REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: LOCAL PROTECTION PROJECT (FLOOD CONTROL)

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM | PROJECT COST ESTIMATE | TOTAL TO 30 SEP 19 85 | CURRENT FY 1986 | BUDGET FY 1987 | BALANCE TO COMPLETE AFTER FY 19 87 |
|---|---|---|---|---|---|---|
| | (a) | (b) | (c) | (d) | (e) | (f) |
| 1 | RELOCATIONS | $ 145,400 | $ 117,100 | $ 28,300 | | |
| 2 | DAMS | 3,478,000 | 3,478,000 | | | |
| 3 | CHANNELS | 4,352,900 | 2,523,800 | 519,100 | $900,000 | $410,000 |
| 4 | ENGINEERING AND DESIGN | 1,510,000 1/ | 1,475,800 | 20,000 | 12,000 | 2,200 |
| 5 | SUPERVISION AND ADMINISTRATION | 653,700 | 551,300 | 40,300 | 38,000 | 24,100 |
| 6 | | | | | | |
| 7 | | | | | | |
| 8 | TOTAL APPLIED COSTS (Federal Funds Only) | 10,140,000 | 8,146,000 | 607,700 | 950,000 | 436,300 |
| 9 | Undistributed Costs (None) | | | | | |
| 10 | TOTAL PROJECT COSTS (Federal Funds Only) | 10,140,000 | 8,146,000 | 607,700 | 950,000 | 436,300 |
| 11 | Pending Adjustments (None) | | | | | |
| 12 | TOTAL COSTS (Federal Funds Only) | 10,140,000 | 8,146,000 | 607,700 | 950,000 | 436,300 |
| 13 | Undelivered Orders | | +256,800 | -256,800 | 950,000 | 436,300 |
| 14 | TOTAL OBLIGATIONS | | 8,402,800 | 350,900 | 950,000 | 436,300 |
| 15 | | | | | | |
| 16 | | | | | | |
| 17 | METHOD OF FINANCING | | | | | |
| 18 | FEDERAL FUNDS | | | | | |
| 19 | Allocations | | 8,403,700 | 350,000 2/ | | |
| 20 | Unobligated Carryover from Prior Year | | | 900 | | |
| 21 | Total Funds Available for Obligation | | | 350,900 | | |
| 22 | Appropriations Required | | | | 950,000 | 436,300 |
| 23 | | | | | | |
| 24 | NON-FEDERAL COSTS | | | | | |
| 25 | Cash Contributions | 0 | | | | |
| 26 | Other Costs | 6,430,000 | 6,430,000 | | | |
| 27 | Lands and Damages | (4,400,000) | (4,400,000) | | | |
| 28 | Relocations | (2,030,000) | (2,030,000) | | | |
| 29 | Other | (0) | (0) | | | |
| 30 | TOTAL NON-FEDERAL COSTS | (6,430,000) | (6,430,000) | | | |
| 31 | | | | | | |
| 32 | 1/ Includes $75,000 for Real Estate Activities. | | | | | |
| 33 | 2/ Reflects $300,000 assigned as Savings and Slippage and $950,000 transfer from the project. | | | | | |

| | | | |
|---|---|---|---|
| EFFECTIVE DATE<br>1 JAN 86 | DIVISION NORTH CENTRAL<br>DISTRICT ROCK ISLAND | REGION UPPER MISSISSIPPI<br>BASIN ROCK-MISS-DES MOINES | PROJECT<br>ROCKFORD, ILLINOIS |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986

APPROPRIATION TITLE: Construction, General - Local Protection (Flood Control)

PROJECT: Bettendorf, Iowa (Continuing)

LOCATION: Bettendorf, Iowa, is located on the right bank of the Mississippi River in Scott County, Iowa, and is one of the Quad Cities, along with Davenport, Iowa, and East Moline, Moline, and Rock Island, Illinois.

AUTHORIZATION: 1968 Flood Control Act

BENEFIT-COST RATIO: The remaining benefit-remaining cost ratio is not applicable as the project is nearing completion. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1975) was 2.3 to 1. The benefit-cost ratio is based on the project functioning independently.

SUMMARIZED FINANCIAL DATA

| | | | Accum. % of Est. Fed. Cost |
|---|---|---|---|
| Estimated Federal Cost | | $14,500,000 | |
| Estimated Non-Federal Cost | | 1,510,000 | |
| Cash Contribution | $ 0 | | |
| Other | 1,510,000 | | |
| Total Estimated Project Cost | | $16,010,000 | |
| Allocations to 30 September 1985 | | 9,882,000 | |
| Conference Allowance for FY 1986 | | 2,400,000 | |
| Allocation for FY 1986 | | 3,000,000 1/ | |
| Allocations to Date | | 12,882,000 | 89 |
| Allocation Requested for FY 1987 | | 1,618,000 | 100 |
| Scheduled Balance to Complete after FY 1987 | | 0 | |
| Unscheduled Balance to Complete after FY 1987 | | 0 | |

| STATUS: (1 January 1986) | PERCENT COMPLETE | COMPLETION SCHEDULE |
|---|---|---|
| Relocations-Railroads | 99 | Jan 1986 |
| Levees & Floodwalls | 56 | May 1987 |
| Pumping Plants | 100 | Dec 1984 |
| Entire Project | 74 | May 1987 |

PHYSICAL DATA

Levees: Length - 2.8 miles
Height - 1.4 feet to 15 feet

Floodwalls: Length - 2,200 feet
Average Height - 9 feet

Pumping Plants: 2

1/ Reflects $600,000 transfer to the project.

Division: North Central

District: Rock Island

4 FEB 1986

Region: Upper Mississippi
Bettendorf, Iowa

JUSTIFICATION: The project will provide a high degree of protection against Mississippi River and Duck Creek floods for Bettendorf, Iowa. The flood problem area, consisting of about 470 acres, has been extensively developed for industrial, commercial, and transportation purposes. Developments in the area to be protected include 101 commercial properties, 19 industrial plants, 40 residences, and 4 public properties. A rail line with spur tracks serves the industrial plants. These developments, located in the heart of the city along the riverfront, have been seriously affected during past floods. Major floods affecting the city occurred in April-May 1951 and 1952, and the all time record flood of April-May 1965. Damages resulting from these floods amounted to $45,000, $53,000, and $1,171,000, respectively. These damages would amount to $362,000, $405,000, and $5,180,000, respectively, at current prices. In event of the occurrence of the design flood, $16,800,000 in damages would result. Construction of the project would prevent occurrence of these damages. Average annual flood control benefits are estimated at $2,253,000 based on 1 October 1985 prices.

FISCAL YEAR 1987: The requested amount will be applied as follows:

| | | |
|---|---|---|
| Complete: | Construction of Levees and Floodwalls | $1,515,000 |
| Complete: | Engineering and Design | 9,000 |
| Complete: | Supervision and Administration | 94,000 |
| | Total | $1,618,000 |

Funds requested are based on an economical rate of construction with project completion scheduled for May 1987.

NON-FEDERAL COSTS: Local interests are to provide lands, easements, and rights-of-way; modify or relocate buildings, utilities, roads, and other facilities, except railroad bridges, ramps, and approaches thereto, where necessary in the construction of the project: obtain legal control over ponding areas where these are required, and prevent encroachment thereon until substitute areas or increased pumping capacity shall have been provided; and maintain and operate the project after completion. The investment required of local interests in construction of the project is estimated at $1,510,000, broken down as follows:

| | |
|---|---|
| Lands and Damages | $1,450,000 |
| Relocations | 60,000 |
| | $1,510,000 |

It is also estimated that the average annual expenditure for maintenance, operation and replacements will total $15,000.

STATUS OF LOCAL COOPERATION: The Local Cooperation Agreement was signed by the Mayor of Bettendorf on 12 March 1979 and executed by the District Engineer for the Secretary of the Army on 16 March 1979. All rights-of-way for the project have been made available.

COMPARISON OF FEDERAL COST ESTIMATE: The current Federal Cost Estimate of $14,500,000 is an increase of $700,000 from the latest estimate ($13,800,000) presented to Congress. This change includes increases of $74,000 for adjustments in the estimated inflation allowance through the construction period, $1,297,000 for more detailed planning of construction, and $129,000 in Supervision and Administration based on a recent reanalysis of requirements. These increases were partially offset by a decrease of $800,000 due to favorable bids received.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT:

a. Status of Environmental Impact Statement: The final Environmental Impact Statement was filed with the Council on Environmental Quality on 10 July 1974; however, as part of the review of previously completed planning and major revisions to the Duck Creek tieoff, a supplement to the Environmental Impact Statement was required. The draft supplement was submitted to the Environmental Protection Agency on 26 June 1981 and the final supplement was filed with the Environmental Protection Agency on 7 May 1982.

b. Compliance with Clean Water Act: The provisions of Section 404 of the Clean Water Act were met for the overall project by a Section 404 (b)(1) Evaluation, a Public Notice issued on 25 March 1980, Certification from the State of Iowa on 25 March 1980, and the District Commander's signature on the Section 404 (b)(1) Evaluation Report on 12 August 1980. However, due to major revisions to the Duck Creek tieoff area of the project, a supplemental Section 404 (b)(1) Evaluation Report was required. The provisions of Section 404 of the Clean Water Act for the Duck Creek tieoff area have been met by a Section 404 (b)(1) Evaluation, a Public Notice issued on 20 July 1981, a Certification waiver issued by the State of Iowa on 7 December 1981, and the District Commander's signature on the Section 404 (b)(1) Evaluation Report on 14 December 1981.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1971 and funds to initiate construction were appropriated in FY 1975. Local interests were unable to comply with local cooperation requirements and, after the failure of a nonbinding referendum, the project was reclassified to the "Inactive" category on 22 July 1976. In 1978 and 1979, the city showed renewed interest in the project and following execution of the Local Cooperation Agreement on 12 March 1979, the project was reclassified to the "Active" category on 10 April 1979.

OTHER INFORMATION: (Cont'd)

New bridges based on more detailed analysis of requirements to pass the 200-year flood flows on Duck Creek were provided in lieu of three gated closure structures for the Davenport, Rock Island and Northwestern Railroad main line and the Alcoa Spur Railroad crossings of Duck Creek. The new bridges lower the flood profile sufficiently to delete a major 4-lane closure structure across State Street. An additional 1,000 feet of T-floodwall in lieu of levees were added to the Duck Creek tieoff because of alignment changes upstream of the Alcoa Spur Railroad Bridge and an additional pumping plant was added based on updated interior drainage analysis.

The first construction contract was awarded in July 1982, for Stage IA, Railroad Relocations.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: North Central
District: Rock Island

Project: Bettendorf, Iowa

| Item | Estimates Presented to Congress ($1,000) | | | | |
|---|---|---|---|---|---|
| | Original Baseline (1) | Cumulative Changes (2) | Last (3) | Incremental Change (4) | Current (5) |
| Federal Cost (Price Level) | 3,840 (July 1973) | | 13,800 1/ | | 14,500 1/ 2/ |
| Reason for Change | | (9,960) 1/ | | (+700) 2/ | |
| a. Price Escalation | | 5,516 | | + 74 | |
| b. Design Changes | | 3,724 | | 0 | |
| c. Additional Function Added Under General Authorization | | 0 | | 0 | |
| d. Authorized Modification | | 0 | | 0 | |
| e. Post-Contract Award and Other Estimating Adjustments | | 720 | | +626 3/ | |
| f. Schedule Changes | | 0 | | 0 | |
| g. Sundry | | 0 | | 0 | |
| h. Real Estate | | 0 | | 0 | |

1/ Includes an allowance for estimated inflation through the construction period.

2/ Includes an increase of $74 for adjustments in the estimated inflation allowance through the construction period.

3/ Includes increases of $1,297 for more detailed planning of construction and $129 in Supervision and Administration, partially offset by a decrease of $800 for favorable bids received.

4 FEB 1986

REPORTS CONTROL SYMBOL: DAEN-CWB-C

|  |  |
|---|---|
| APPROPRIATION TITLE: CONSTRUCTION GENERAL | CLASSIFICATION: LOCAL PROTECTION PROJECT (FLOOD CONTROL) |

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM | PROJECT COST ESTIMATE | TOTAL TO 30 SEP 19 85 | CURRENT FY 19 86 | BUDGET FY 19 87 | BALANCE TO COMPLETE AFTER FY 19 87 |
|---|---|---|---|---|---|---|
|  | (a) | (b) | (c) | (d) | (e) | (f) |
| 1 | RELOCATIONS | $ 2,053,700 | $2,016,400 | $ 37,300 |  |  |
| 2 | LEVEES | 7,914,000 | 3,481,500 | 2,917,500 | $1,515,000 |  |
| 3 | PUMPING PLANTS | 1,903,300 | 1,903,300 |  |  |  |
| 4 | ENGINEERING AND DESIGN | 1,720,000 1/ | 1,690,900 | 20,000 | 9,100 |  |
| 5 | SUPERVISION AND ADMINISTRATION | 909,000 | 642,100 | 173,000 | 93,900 |  |
| 6 |  |  |  |  |  |  |
| 7 |  |  |  |  |  |  |
| 8 | TOTAL APPLIED COSTS (Federal Funds Only) | 14,500,000 | 9,734,200 | 3,147,800 | 1,618,000 |  |
| 9 | Undistributed Costs (None) |  |  |  |  |  |
| 10 | TOTAL PROJECT COSTS (Federal Funds Only) | 14,500,000 | 9,734,200 | 3,147,800 | 1,618,000 |  |
| 11 | Pending Adjustments (None) |  |  |  |  |  |
| 12 | TOTAL COSTS (Federal Funds Only) | 14,500,000 | 9,734,200 | 3,147,800 | 1,618,000 |  |
| 13 | Undelivered Orgers |  | +147,800 | -147,800 |  |  |
| 14 | TOTAL OBLIGATIONS |  | 9,882,000 | 3,000,000 | 1,618,000 |  |
| 15 |  |  |  |  |  |  |
| 16 |  |  |  |  |  |  |
| 17 | METHOD OF FINANCING |  |  |  |  |  |
| 18 | FEDERAL FUNDS |  |  |  |  |  |
| 19 | Allocations |  | 9,882,000 | 3,000,000 2/ |  |  |
| 20 | Unobligated Carryover from Prior Year |  |  | 0 |  |  |
| 21 | Total Funds Available for Obligation |  |  | 3,000,000 |  |  |
| 22 | Appropriations Required |  |  |  | 1,618,000 |  |
| 23 |  |  |  |  |  |  |
| 24 | NON-FEDERAL COSTS |  |  |  |  |  |
| 25 | Cash Contributions | 0 |  |  |  |  |
| 26 | Other Costs | 1,510,000 | 1,510,000 |  |  |  |
| 27 | Lands and Damages | (1,450,000) | (1,450,000) |  |  |  |
| 28 | Relocations | (60,000) | (60,000) |  |  |  |
| 29 | Other | (0) | (0) |  |  |  |
| 30 | TOTAL NON-FEDERAL COSTS | 1,510,000 | 1,510,000 |  |  |  |
| 31 |  |  |  |  |  |  |
| 32 | 1/ Includes $32,000 for Real Estate Activities. |  |  |  |  |  |
| 33 | 2/ Reflects $600,000 transfer to the project. |  |  |  |  |  |

|  |  |  |  |
|---|---|---|---|
| EFFECTIVE DATE 1 JAN 86 | DIVISION NORTH CENTRAL<br>DISTRICT ROCK ISLAND | REGION UPPER MISSISSIPPI<br>BASIN ROCK-MISS-DES MOINES | PROJECT BETTENDORF, IOWA |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986

APPROPRIATION TITLE: Construction, General - Local Protection (Flood Control)

PROJECT: Bassett Creek, Minnesota (Continuing)

LOCATION: The project is located in Hennepin County and Minneapolis, Minnesota, on Bassett Creek, a tributary of the Mississippi River.

AUTHORIZATION: 1976 Water Resources Development Act, and FY 1985 Supplemental Appropriation Act (Public Law 99-88).

BENEFIT-COST RATIO: The benefit-cost ratio is 1.2 to 1 at 8 1/8 percent. Applicable rate of 8 1/8 percent was based on receipt of FY 1985 Supplemental Appropriations for a new construction start. The benefit-cost ratio is based on the project functioning independently.

| SUMMARIZED FINANCIAL DATA | | | Accum. % of Est. Fed. Cost |
|---|---|---|---|
| Estimated Federal Cost | | $26,000,000 | |
| Estimated Non-Federal Cost | | 8,700,000 | |
| Cash Contribution | $3,392,000 | | |
| Other | 5,308,000 | | |
| Total Estimated Project Cost | | $34,700,000 | |
| Allocations to 30 September 1985 | | $ 1,715,000 1/ | |
| Conference Allowance for FY 1986 | | 0 | |
| Potential Allocation for FY 1986 | | 385,000 | |
| Potential Allocations through FY 1986 | | 2,100,000 | 8 |
| Allocation Requested for FY 1987 | | 6,000,000 | 31 |
| Scheduled Balance to Complete After FY 1987 | | 17,900,000 | |
| Unscheduled Balance to Complete After FY 1987 | | 0 | |

1/ Includes $885,000 appropriated under General Investigation.

| STATUS: (1 January 1986) | PERCENT COMPLETE | COMPLETION SCHEDULE |
|---|---|---|
| Relocations | 0 | Sep 1987 |
| Channels | 0 | Sep 1991 |
| Flood Control Structures | 0 | Aug 1989 |
| Entire Project | 0 | Sep 1991 |

PHYSICAL DATA

Relocations:
Railroad Bridge Replacement
Railroad Bridge Modification

Channels:

| | |
|---|---|
| 13-foot diameter tunnel | 6,700 linear feet |
| 12-foot diameter tunnel | 4,800 linear feet |
| Channel improvement | 5,085 linear feet |
| Bridge removals | 2 |
| Storage area excavation | 157,000 cubic yards |

Flood Control Structures:

| | | | |
|---|---|---|---|
| Structures | 6 | Culvert replacements | 9 |
| Earth embankments for structures | 5 | Culvert removal | 1 |

DIVISION: North Central DISTRICT: St. Paul 4 FEB 1986 REGION: Upper Mississippi
Bassett Creek, Minnesota

**JUSTIFICATION:** Residential areas in the upper watershed and industrial and commercial lands in the lower watershed together with several major highways and railroads are subject to frequent flooding. A large commercial and industrial area in Minneapolis is especially susceptible to flood damage because it is located immediately upstream of the 1.5 mile tunnel which is the outlet for the entire Bassett Creek watershed. A blockage of this deteriorating tunnel during a 100-year flood event would cause flood damages exceeding $28,152,000 in the proximity of the tunnel entrance. Severe flood damages also occur in the communities of Golden Valley, New Hope, and Crystal. Recent severe flooding in the Bassett Creek watershed occurred in 1974, 1975 and 1978. Summer rainstorms and spring snowmelt often increased by rainfall are the major causes of flood damage in the watershed. A related problem, caused by the rain and flooding, is sanitary sewer backup in many homes. A severe flood in June 1942 was significant because of the damage incurred by the commercial and industrial establishments in Minneapolis. If a flood of this magnitude were to occur at this time, damages of approximately $3,253,000 would result in Minneapolis and damages of approximately $8,674,000 would be sustained throughout the remainder of the watershed. Flood damages presently average approximately $2,095,000 annually without flood protection. Appropriate measures would provide flood protection for some 222 residences and 18 industries located in the flood plain, and an indeterminate amount of commercial and industrial development in Minneapolis. The average annual benefits are as follows:

| Benefits | Amount (Applicable Rate, 8 1/8%) (1 October 1985) |
|---|---|
| Flood Control | $1,813,200 |
| Advance Replacement | 1,550,800 |
| Total | $3,364,000 |

**FISCAL YEAR 1987:** The requested amount will be applied as follows:

| | |
|---|---|
| Initiate construction of Upstream Stage 2 Improvements | $ 864,000 |
| Complete construction of Upstream State 1 Improvements | 103,000 |
| Complete reimbursement to Minnesota Department of Transportation | 4,054,000 |
| Complete reimbursment to city of Golden Valley | 450,000 |
| Engineering and Design | 400,000 |
| Supervision and Administration | 129,000 |
| Total | $6,000,000 |

The funds requested for FY 1987 are based on an economical rate of construction progress with completion of the entire project scheduled for September 1991.

4 FEB 1986

**NON-FEDERAL COST:** Consistent with the cost-sharing and financing concepts agreed to by the administration and the Senate majority leadership, local interests will be required to provide lands, easements, and rights-of-way, presently estimated at $3,482,000; modify or relocate buildings, utilities, roads, and other facilities, except railroad bridges, where necessary in the construction of the project, presently estimated at $1,826,000; during construction make an additional cash contribution to increase their share to 25 percent of total construction cost for flood control, presently estimated at $3,392,000, and bear all costs of operation, maintenance, and replacement of flood control facilities presently estimated at $19,200 annually.

**STATUS OF LOCAL COOPERATION:** By resolutions approved 12 September 1974, 31 October 1975, and 11 December 1981 the city of Minneapolis indicated its willingness and intention to meet the requirements of local cooperation. By letter dated 29 October 1982, the city of Minneapolis indicated its continued support of the project and its intention to participate in innovative project financing as proposed by the Department of the Army. On 6 September 1985, the city of Minneapolis submitted a draft letter of assurance supporting the project.

**COMPARISON OF FEDERAL COST ESTIMATES:** The current Federal cost estimate of $26,000,000 is an increase of $1,700,000 over the latest estimate ($24,300,000 - 1 October 1984) presented to Congress. This change includes increases of $300,000 based on higher price levels to 1 October 1985, and $3,400,000 based on a change in proposed non-Federal cost-sharing requirements from 35% to 25%. These increases were partially offset by a decrease of $2,000,000 for adjustments in the estimated inflation allowance from 1 October 1985 through the construction period.

**STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT:** The final Environmental Impact Statement was filed with the Environmental Protection Agency on 10 July 1978. An environmental assessment was prepared in 1982 to accompany a feature design memorandum. The finding of no significant impact was signed on 20 January 1983. To accompany an additional feature design memorandum, a draft supplement to the Final Environmental Impact Statement is scheduled for submission to the Environmental Protection Agency in the first quarter of FY 1988. The final supplement is scheduled for submission in the second quarter of FY 1988.

The provisions of Section 404 of the Clean Water Act have been met for the completed feature design memorandum by a Section 404(b)(1) Evaluation completed on 4 January 1983, a Public Notice issued on 17 December 1982, and a Certification Waiver from the State of Minnesota issued on 4 January 1983.

**OTHER INFORMATION:** Funds to initiate preconstruction planning were appropriated in FY 1979. The plan of improvement for flood control includes a conduit and tunnel through a highly urbanized area of Minneapolis constructed in cooperation with the Minnesota Department of Transportation under its proposed interstate highway system. Cooperative construction of the conduit and tunnel will result in estimated cost savings of about $4,500,000 when compared to construction of separate drainage facilities for major area highways (I-94, I-394) and for the Bassett Creek watershed. A cooperative construction agreement between the Minnesota Department of Transportation and the city of Minneapolis relative to the city's participation in cost sharing a storm drain tunnel and associated facilities, including tunnel facilities to accommodate Bassett Creek waters, was fully executed in February 1978. Under the agreement, the city will pay to the State its share of costs for the tunnel and associated facilities, including the allocated Federal share for the Bassett Creek project. Project authorization includes a provision that local interests may be reimbursed for any costs they may incur in the interest of flood control as part of the advance construction of the Federal share of the cooperative conduit and tunnel facilities. The Minnesota Department of Transportation has completed construction of 4,800 feet of tunnel for which the Federal share is approximately $4,054,000. A Section 215 agreement between the city of Golden Valley, the city of Minneapolis, and the United States Government concerning potential Federal reimbursement for certain local expenditures on this project was executed on 30 August 1979. Local construction began in November 1981 and was completed in October 1983 for which the Federal share is approximately $450,000.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATES:

**Division:** North Central
**District:** St. Paul

**Project:** Bassett Creek, Minnesota

| Item | Estimates Presented to Congress ($1,000)<br>Original Baseline<br>(1) | Cumulative Changes<br>(2) | Last<br>(3) | Incremental Change<br>(4) | Current<br>(5) |
|---|---|---|---|---|---|
| Federal Cost | 21,300 | | 24,300 1/ | | 26,000 1/2/ |
| (Price Level) | (Oct 1983) | | (Oct 1983) | | |
| Reason for Change | | (3,000)1/ | | (+1,700) 2/ | |
| a. Price Escalation | | 3,342 | | -1,700 | |
| b. Design Changes | | 0 | | 0 | |
| c. Additional Function Added Under General Authorization | | 0 | | 0 | |
| d. Authorized Modification | | 0 | | 0 | |
| e. Post-Contract Award and Other Estimating Adjustments | | -342 | | 0 | |
| f. Schedule Changes | | 0 | | 0 | |
| g. Sundry | | 0 | | 3,400 3/ | |
| h. Real Estate | | 0 | | 0 | |

1/ Includes an allowance for estimated inflation through the construction period.
2/ Includes a decrease of $2,000 for adjustments in the estimated inflation allowance from 1 October 1985 through the construction period.
3/ Based on change in proposed non-Federal cost-sharing requirements from 35 percent to 25 percent.

4 FEB 1986

REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: LOCAL PROTECTION (FLOOD CONTROL)

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 1986 AND 1987

| LINE NO | ITEM (a) | PROJECT COST ESTIMATE (b) | TOTAL TO 30 SEP 1985 (c) | CURRENT FY 1986 (d) | BUDGET FY 1987 (e) | BALANCE TO COMPLETE AFTER FY 1987 (f) |
|---|---|---|---|---|---|---|
| 1 | RELOCATIONS | 164,000 | 0 | 0 | 164,000 | 0 |
| 2 | CHANNELS | 22,964,000 | 0 | 0 | 4,904,000 | 18,060,000 |
| 3 | FLOOD CONTROL STRUCTURES | 1,341,000 | 0 | 100,000 | 403,000 | 838,000 |
| 4 | ENGINEERING AND DESIGN | 3,268,000 | 1,575,000 | 263,000 | 400,000 | 1,030,000 |
| 5 | SUPERVISION AND ADMINISTRATION | 1,655,000 | 122,000 | 40,000 | 129,000 | 1,364,000 |
| 6 | | | | | | |
| 7 | TOTAL APPLIED COST (Fed. Funds & | | | | | |
| 8 | Non-Fed. Contributions) | 29,392,000 | 1,697,000 | 403,000 | 6,000,000 | 21,292,000 |
| 9 | Undistributed Cost (None) | | | | | |
| 10 | TOTAL PROJECT COST (Fed. Funds & | | | | | |
| 11 | Non-Fed. Contributions) | 29,392,000 | 1,697,000 | 403,000 | 6,000,000 | 21,292,000 |
| 12 | Pending Adjustments (None) | | | | | |
| 13 | TOTAL COST (Fed. Funds and Non-Fed. | | | | | |
| 14 | Contributions) | 29,392,000 | 1,697,000 | 403,000 | 6,000,000 | 21,292,000 |
| 15 | | | | | | |
| 16 | FEDERAL FUNDS | | | | | |
| 17 | TOTAL APPLIED COST | 26,000,000 | 1,697,000 | 403,000 | 6,000,000 | 17,900,000 |
| 18 | Undistributed Cost (None) | | | | | |
| 19 | TOTAL PROJECT COST | 26,000,000 | 1,697,000 | 403,000 | 6,000,000 | 17,900,000 |
| 20 | Pending Adjustments (None) | | | | | |
| 21 | TOTAL COST | 26,000,000 | 1,697,000 | 403,000 | 6,000,000 | 17,900,000 |
| 22 | Undelivered Orders | | 1,000 | -1,000 | | |
| 23 | TOTAL OBLIGATIONS | | 1,698,000 | 402,000 | 6,000,000 | 17,900,000 |
| 24 | | | | | | |
| 25 | NON-FEDERAL CONTRIBUTIONS | | | | | |
| 26 | TOTAL APPLIED COST | 3,392,000 | 0 | 0 | 0 | 3,392,000 |
| 27 | Undistributed Cost (None) | | | | | |
| 28 | TOTAL PROJECT COST | 3,332,000 | 0 | 0 | 0 | 3,392,000 |
| 29 | Pending Adjustments (None) | | | | | |
| 30 | TOTAL COST | 3,392,000 | 0 | 0 | 0 | 3,392,000 |
| 31 | Undelivered Orders (None) | | | | | |
| 32 | TOTAL OBLIGATIONS | | 0 | 0 | 0 | 3,392,000 |
| 33 | | | | | | |

| EFFECTIVE DATE | DIVISION | REGION | PROJECT |
|---|---|---|---|
| 1 JAN 1986 | NORTH CENTRAL<br>DISTRICT ST. PAUL | UPPER MISSISSIPPI<br>BASIN MISSISSIPPI HEADWATERS | BASSETT CREEK, MINNESOTA |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986

REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: LOCAL PROTECTION (FLOOD CONTROL)

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 1986 AND 1987

| LINE NO | ITEM (a) | PROJECT COST ESTIMATE (b) | TOTAL TO 30 SEP 1985 (c) | CURRENT FY 1986 (d) | BUDGET FY 1987 (e) | BALANCE TO COMPLETE AFTER FY 1987 (f) |
|---|---|---|---|---|---|---|
| 1 | METHOD OF FINANCING | | | | | |
| 2 | FEDERAL FUNDS | | | | | |
| 3 | ALLOCATIONS | | 1,715,000 1/ | 385,000 2/ | | |
| 4 | UNOBLIGATED CARRY-OVER FROM PRIOR YEAR | | | 17,000 | | |
| 5 | TOTAL FUNDS AVAILABLE FOR OBLIGATION | | | 402,000 | | |
| 6 | APPROPRIATIONS REQUIRED | | | | 6,000,000 | 17,900,000 |
| 7 | | | | | | |
| 8 | NON-FEDERAL CONTRIBUTIONS | | | | | |
| 9 | CONTRIBUTIONS | | | | | |
| 10 | UNOBLIGATED CARRY-OVER FROM PRIOR YEAR | | | | | |
| 11 | TOTAL FUNDS AVAILABLE FOR OBLIGATION | | | | | |
| 12 | CONTRIBUTIONS REQUIRED | | | | | 3,392,000 |
| 13 | LANDS AND DAMAGES | | | 494,000 | 1,424,000 | 1,564,000 |
| 14 | RELOCATIONS | | 1,100,000 | 227,000 | 499,000 | |
| 15 | TOTAL NON-FEDERAL COST | | 1,100,000 | 721,000 | 1,923,000 | 4,956,000 |
| 16 | | | | | | |
| 17 | 1/ Includes $885,000 appropriated under General Investigations. | | | | | |
| 18 | | | | | | |
| 19 | 2/ Consists of FY 1985 Supplemental Funds. | | | | | |
| 20 | | | | | | |
| 21 | | | | | | |
| 22 | | | | | | |
| 23 | | | | | | |
| 24 | | | | | | |
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| 30 | | | | | | |
| 31 | | | | | | |
| 32 | | | | | | |
| 33 | | | | | | |

| EFFECTIVE DATE | DIVISION | REGION | PROJECT |
|---|---|---|---|
| 1 JAN 1986 | NORTH CENTRAL<br>DISTRICT ST. PAUL | UPPER MISSISSIPPI<br>BASIN MISSISSIPPI HEADWATERS | BASSETT CREEK, MINNESOTA |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986

**APPROPRIATION TITLE:** Construction, General - Local Protection (Flood Control)

**PROJECT:** Mankato and North Mankato, Minnesota (Continuing)

**LOCATION:** The project is located on the Minnesota River at Mankato, North Mankato, and Le Hillier, which are in Nicollet and Blue Earth Counties in south central Minnesota.

**AUTHORIZATION:** 1958 and 1965 Flood Control Acts, and 1974 and 1976 Water Resource Development Acts

**BENEFIT-COST RATIO:** The remaining benefit-remaining cost ratio is 8.0 to 1 at 3 1/8 percent. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1968) is 1.5 to 1. The benefit-cost ratio is based on the project functioning independently.

| SUMMARIZED FINANCIAL DATA | | | | Accum. % of Est. Fed. Cost |
|---|---|---|---|---|
| Estimated Federal Cost | | $ 95,200,000 | | |
| Estimated Non-Federal Cost | | 4,680,000 | | |
| Cash Contribution | $ 630,000 | | | |
| Other | 4,050,000 | | | |
| Total Estimated Project Cost | | $ 99,880,000 | | |
| Allocations to 30 September 1985 | | $ 65,971,000 | | |
| Conference Allowance for FY 1986 | | 13,100,000 | | |
| Allocation for FY 1986 | | 11,500,000 | 1/ | |
| Allocations to Date | | 77,471,000 | | 81 |
| Allocation Requested for FY 1987 | | 8,800,000 | | 91 |
| Scheduled Balance to Complete after FY 1987 | | 8,929,000 | | |
| Unscheduled Balance to Complete after FY 1987 | | 0 | | |

1/ Reflects $1,600,000 reduction assigned as savings and slippage.

| STATUS: (1 January 1986) | PERCENT COMPLETE | COMPLETION SCHEDULE |
|---|---|---|
| Mankato | 73 | Sep 1989 |
| North Mankato | 84 | Nov 1986 |
| Le Hillier | 31 | Sep 1989 |
| Entire Project | 70 | Sep 1989 |

PHYSICAL DATA

| | Mankato | North Mankato | Le Hillier |
|---|---|---|---|
| Levees | 7,440 feet | 9,480 feet | 7,300 feet |
| Floodwall | 6,920 feet | 6,900 feet | |
| Closures | 2 | 2 | 1 |
| Pumping Plants | 4 | 3 | 2 |
| Relocations | | | |
| 2 Highway Bridges | $12,952,000 | $7,500,000 | $5,452,000 |
| 1 Railroad Bridge | $ 3,943,000 | | $1,315,000 |
| ROW for Relocations | $ 3,750,000 | $2,570,000 | $ 184,000 |

DIVISION: North Central

DISTRICT: St. Paul

4 FEB 1986

REGION: Upper Mississippi

Mankato and North Mankato, Minnesota

JUSTIFICATION: The urban population of Mankato, North Mankato, and Le Hillier is about 40,000. The principal occupation in surrounding areas is agriculture and many of the main industries in Mankato and North Mankato are concerned with serving farm needs or manufacturing and processing agricultural products. Frequent severe flooding occurs in the spring as a result of snowmelt and in the summer following periods of heavy rainfall. The maximum flood of record, April 1965, caused the evacuation of over 6,000 people and estimated damages in the project areas of $5,827,000 in spite of flood-fighting efforts by local interests. In addition, estimated damages of $1,087,000, including the cost of a flood fight, were sustained at Le Hillier. Under current conditions and at present prices, estimated damages of $88,076,000 at Mankato and North Mankato and $4,417,000 at Le Hillier would have occurred without the flood-fighting efforts of local interests. These estimated damages would be prevented by the project. The stage of the April 1965 flood was slightly less than the previously-known greatest flood in 1881. In April 1969, a flood about 1.2 feet below the stage of the record 1965 flood, caused damages of $984,000, including the cost of a flood fight. Without the flood-fighting efforts of local interests, damages, under current conditions and at present price levels, would have amounted to about $64,063,000.

The average annual benefits are as follows:

| Benefits | Amount<br>(1 October 1985) |
|---|---|
| Flood Control | $5,479,400 |
| Recreation | 232,700 |
| Total | $5,712,100 |

FISCAL YEAR 1987: The requested amount will be applied as follows:

| | |
|---|---|
| Complete construction of T.H. 60 (Main St.) Bridges in Mankato and North Mankato | $ 600,000 |
| Complete construction of C&NW RR Bridges in Mankato and Le Hillier | 2,699,000 |
| Complete construction of the Stage 2B (High Plan) in Le Hillier | 162,000 |
| Initiate construction of U.S. Hwy 169 Bridges in Mankato and Le Hillier | 2,989,000 |
| Initiate construction of Stage 3C-2 in Mankato | 1,460,000 |
| Engineering and Design | 344,000 |
| Supervision and Administration | 546,000 |
| Total | $8,800,000 |

The funds requested for FY 1987 are required for an orderly rate of construction progress, with completion of the entire project scheduled for September 1989.

**NON-FEDERAL COST:** Local interests are required to furnish all lands, easements, and rights-of-way, and accomplish necessary relocations of utilities, highways, highway bridges including approaches, except for changes to the highway bridges at U.S. Highway 169 over the Blue Earth River and at Main Street over the Minnesota River. In addition, local interests are to contribute in cash or equivalent construction work 1.9 percent of the gross Federal first cost and to pay, contribute in kind or repay, with interest, one-half of the separable cost for construction of recreational and/or fish and wildlife facilities and specific recreation lands. The investment required of local interests in construction of the authorized project is broken down as follows:

| | Mankato | North Mankato | Le Hillier | Total |
|---|---|---|---|---|
| Construction of Levees | $1,086,000 (1) | | | $1,086,000 |
| Lands and Damages | 635,000 | $615,000 | $121,000 | 1,371,000 |
| Relocations | 1,498,000 | 6,000 | 89,000 | 1,593,000 |
| Cash Contribution (Recreation Facilities) | 457,000 | 173,000 | | 630,000 |
| | $3,676,000 | $794,000 | $210,000 | $4,680,000 |

(1) Section 207 of the Flood Control Act of 1965 provides that the original authorization be modified to credit local interests against their required contribution for prior work done in accordance with the authorized project. The estimated value of this credit is $1,086,000.

Local interests are required to maintain and operate the project after completion. Estimated average annual cost is $124,400 for Mankato, $47,400 for North Mankato, and $38,000 for Le Hillier, a total of $209,800.

Local interests in both Mankato and North Mankato constructed levees after the 1951 flood at a cost of about $209,000. Emergency levees were constructed during the 1965 flood at a cost of about $2,365,000. Also, the city of Mankato, in an attempt to relieve damages from a future flood which might occur before a Federal project is constructed, has built permanent levees in certain areas at an estimated cost of about $315,000. These levees were raised and improved during emergency activities for the 1969 flood.

**STATUS OF LOCAL COOPERATION:** Formal resolution of assurances agreeing to provide local cooperation when requested to do so were passed by the City Councils of North Mankato, Mankato, and South Bend Township (Le Hillier), respectively, on 12 November 1968 and accepted by the District Engineer on 5 January 1970. Additional assurances that the city of Mankato would comply with the provisions of the Uniform Relocations Assistance and Real Property Acquisition Policies Act of 1970, Public Law 91-646, were furnished on 18 February 1975 and accepted on 31 March 1975. A resolution of intent to furnish the necessary local cooperation in connection with the recreation development was passed by the city of Mankato on 25 June 1973. Rights-of-way for initial construction at North Mankato and Mankato, and for construction at Le Hillier, have been furnished. Remaining rights-of-way for the project are expected to be made available as required for the construction schedule.

**COMPARISON OF FEDERAL COST ESTIMATES:** The current Federal cost estimate of $95,200,000 is a decrease of $3,500,000 over the latest estimate ($98,700,000) presented to Congress. This change includes decreases of $1,480,000 for adjustments in the estimated inflation allowance through the construction period and $2,800,000 for contract adjustment on the Main Street/T.H.60 Bridge Relocations construction costs due to favorable bids received. These decreases were partially offset by increases of $300,000 for bridge relocations rights-of-way based on actual acquisition costs, $80,000 for damages to Stage 3C-1 construction work due to a severe rainstrom, and $400,000 for Engineering and Design based on a reassessment of remaining work through project completion.

**STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT:** The final Environmental Impact Statement was filed with the Council on Environmental Quality on 12 April 1972. A draft supplement for recreational development was filed with the Environmental Protection Agency on 12 March 1979. The final supplement was filed with the Environmental Protection Agency on 3 October 1980. A draft supplement for bridge relocations was filed with the EPA on 2 January 1981 for the Trunk Highway 169 bridge, 5 May 1981 for the Chicago and Northwestern bridge, and 6 July 1981 for the Main Street bridge. The final supplement for bridge relocations was filed with the EPA on 21 March 1983 for the Main St. Bridge, 1 August 1983 for the T.H. 169/60 Bridge, and 16 December 1983 for the Chicago and Northwestern Bridge.

The provisions of Section 404 of the Clean Water Act have been met for the project by a Section 404 (b)(1) Evaluation, a Public Notice issued on 31 March 1978, and the District Commander's signature on the Section 404 Report on 16 March 1979. Section 401 Certification was issued by the State of Minnesota for the following stages of construction: Stage 4A, 11 September 1978; Stages 4B and 3B-2A, 2 January 1979; Stage 3B-1, 12 December 1980; and Stage 3C, 2 May 1982.

For the bridge relocations, the provisions of Section 404 of the Clean Water Act were met by inclusion of the Section 404 (b)(1) Evaluation in the Environmental Impact Statement supplement. A waiver of Section 401 Certification was issued by the State of Minnesota on 30 March 1983 for the Main St. Bridge, on 24 May 1983 for the T.H. 169/60 Bridge, and on 2 December 1983 for the Chicago and Northwestern Bridge.

**OTHER INFORMATION:** Funds to initiate preconstruction planning were appropriated in FY 1959. Due to failure of the cities of Mankato and North Mankato to assume responsibility of local cooperation, the project was placed in an "inactive" category in 1962. Following the record flood in April 1965, the cities of Mankato and North Mankato and the village of Le Hillier requested reactivation of the project and resolved to provide formal assurances of local cooperation. The project was reclassified to the "active" category in June 1965. Preconstruction funding was resumed in FY 1966. Funds to initiate construction were appropriated in FY 1968.

The 1976 Water Resources Development Act provided that changes to the highway bridges at Highway 169 over the Blue Earth River and at Main Street over the Minnesota River, including rights-of-way and changes to approaches and relocations, made necessary by the project shall be accomplished at Federal expense.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: North Central
District: St. Paul

Project: Mankato and North Mankato, Minnesota

| Item | Original Baseline (1) | Cumulative Changes (2) | Last (3) | Incremental Change (4) | Current (5) |
|---|---|---|---|---|---|
| | Estimates Presented to Congress ($1,000) | | | | |
| Federal Cost<br>(Price Level) | 5,200<br>(Jul 1966) | | 98,700 1/ | | 95,200 1/2/ |
| Reason for Change | | ( 500)1/ | | (-3,500)2/ | |
| a. Price Escalation | | 233 | | -1,502 | |
| b. Design Changes | | ,797 | | 0 | |
| c. Additional Function Added Under General Authorization | | 242 | | 0 | |
| d. Authorized Modification | | 20,560 | | 0 | |
| e. Post-Contract Award and Other Estimating Adjustments | | 9,746 | | -2,020 3/ | |
| f. Schedule Changes | | 0 | | 0 | |
| g. Sundry | | 149 | | 0 | |
| h. Real Estate | | 2,773 | | 22 | |

1/ Includes an allowance for estimated inflation through the construction period.

2/ Includes a decrease of $1,480 for adjustments in the estimated inflation allowance through the construction period.

3/ Includes a decrease of $2,800 for contract adjustments on the Main Street/T.H.60 Bridge Relocations construction costs due to favorable bids received. This decrease was partially offset by increases of $300 for bridge relocations rights-of-way based on actual acquisition costs, $80 for damages to Stage 3C-1 construction work due to a severe rainstorm, and $400 for Engineering and Design based on a reassessment of remaining work through project completion.

4 FEB 1986

REPORTS CONTROL SYMBOL: DAEN-CWB-13

| | |
|---|---|
| APPROPRIATION TITLE: CONSTRUCTION GENERAL | CLASSIFICATION: LOCAL PROTECTION (FLOOD CONTROL) |

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM | PROJECT COST ESTIMATE | TOTAL TO 30 SEP 19 85 | CURRENT FY 19 86 | BUDGET FY 19 87 | BALANCE TO COMPLETE AFTER FY 19 87 |
|---|---|---|---|---|---|---|
| | (a) | (b) | (c) | (d) | (e) | (f) |
| 1 | MANKATO UNIT | | | | | |
| 2 | RELOCATIONS | 20,645,000 | 6,809,000 | 6,075,000 | 3,833,000 | 3,928,000 |
| 3 | LEVEES AND FLOODWALLS | 18,676,000 | 17,104,000 | | 1,460,000 | 112,000 |
| 4 | PUMPING PLANTS | 4,131,000 | 4,131,000 | | | |
| 5 | RECREATION FACILITIES | 778,000 | 180,000 | | | 598,000 |
| 6 | DIVERSION STRUCTURE | 4,490,000 | 4,490,000 | | | |
| 7 | ENGINEERING AND DESIGN | 8,213,000[1] | 7,765,000 | 230,000 | 177,000 | 41,000 |
| 8 | SUPERVISION AND ADMINISTRATION | 3,935,000 | 2,804,000 | 475,000 | 318,000 | 338,000 |
| 9 | SUBTOTAL, MANKATO UNIT | 60,868,000 | 43,283,000 | 6,780,000 | 5,788,000 | 5,017,000 |
| 10 | NORTH MANKATO UNIT | | | | | |
| 11 | RELOCATIONS | 10,070,000 | 6,070,000 | 3,700,000 | 300,000 | |
| 12 | LEVEES AND FLOODWALLS | 7,035,000 | 7,035,000 | | | |
| 13 | PUMPING PLANTS | 1,206,000 | 1,206,000 | | | |
| 14 | RECREATION FACILITIES | 300,000 | 300,000 | | | |
| 15 | ENGINEERING AND DESIGN | 2,842,000[2] | 2,795,000 | 40,000 | 7,000 | |
| 16 | SUPERVISION AND ADMINISTRATION | 1,156,000 | 733,000 | 347,000 | 76,000 | |
| 17 | SUBTOTAL, NORTH MANKATO UNIT | 22,609,000 | 18,139,000 | 4,087,000 | 383,000 | |
| 18 | LE HILLIER UNIT | | | | | |
| 19 | RELOCATIONS | 6,951,000 | 80,000 | 729,000 | 2,155,000 | 3,987,000 |
| 20 | LEVEES AND FLOODWALLS | 3,027,000 | 2,200,000 | 665,000 | 162,000 | |
| 21 | PUMPING PLANTS | 634,000 | 634,000 | | | |
| 22 | ENGINEERING AND DESIGN | 1,051,000[3] | 626,000 | 243,000 | 160,000 | 22,000 |
| 23 | SUPERVISION AND ADMINISTRATION | 690,000 | 182,000 | 80,000 | 152,000 | 357,000 |
| 24 | SUBTOTAL, LE HILLIER UNIT | 12,353,000 | 3,722,000 | 1,717,000 | 2,629,000 | 4,285,000 |
| 25 | | | | | | |
| 26 | TOTAL APPLIED COST (Fed. Funds & Non- | | | | | |
| 27 | Fed. Contributions) | 95,830,000 | 65,144,000 | 12,584,000 | 8,800,000 | 9,302,000 |
| 28 | Undistributed Cost (None) | | | | | |
| 29 | TOTAL PROJECT COST (Fed. Funds & Non- | | | | | |
| 30 | Fed. Contributions) | 95,830,000 | 65,144,000 | 12,584,000 | 8,800,000 | 9,302,000 |
| 31 | Pending Adjustments (None) | | | | | |
| 32 | TOTAL COST (Fed. Funds & Non-Fed. | | | | | |
| 33 | Contributions) | 95,830,000 | 65,144,000 | 12,584,000 | 8,800,000 | 9,302,000 |

| | | | |
|---|---|---|---|
| EFFECTIVE DATE<br>1 JAN 1986 | DIVISION NORTH CENTRAL<br>DISTRICT ST. PAUL | REGION UPPER MISSISSIPPI<br>BASIN MISSISSIPPI HEADWATERS | PROJECT<br>MANKATO AND NORTH MANKATO, MINNESOTA |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986

REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: LOCAL PROTECTION (FLOOD CONTROL)

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM (a) | PROJECT COST ESTIMATE (b) | TOTAL TO 30 SEP 19 85 (c) | CURRENT FY 19 86 (d) | BUDGET FY 19 87 (e) | BALANCE TO COMPLETE AFTER FY 19 87 (f) |
|---|---|---|---|---|---|---|
| 1 | FEDERAL FUNDS | | | | | |
| 2 | TOTAL APPLIED COST | 95,200,000 | 64,967,000 | 12,504,000 | 8,800,000 | 8,929,000 |
| 3 | Undistributed Cost (None) | | | | | |
| 4 | TOTAL PROJECT COST | 95,200,000 | 64,967,000 | 12,504,000 | 8,800,000 | 8,929,000 |
| 5 | Pending Adjustments (None) | | | | | |
| 6 | TOTAL COST | 95,200,000 | 64,967,000 | 12,504,000 | 8,800,000 | 8,929,000 |
| 7 | Undelivered Orders | | 1,001,000 | -1,001,000 | | |
| 8 | TOTAL OBLIGATIONS | | 65,968,000 | 11,503,000 | 8,800,000 | 8,929,000 |
| 9 | | | | | | |
| 10 | NON-FEDERAL CONTRIBUTIONS | | | | | |
| 11 | TOTAL APPLIED COST | 630,000 | 177,000 | 80,000 | | 373,000 |
| 12 | Undistributed Cost (None) | | | | | |
| 13 | TOTAL PROJECT COST | 630,000 | 177,000 | 80,000 | | 373,000 |
| 14 | Pending Adjustments (None) | | | | | |
| 15 | TOTAL COST | 630,000 | 177,000 | 80,000 | | 373,000 |
| 16 | Undelivered Orders | | | | | |
| 17 | TOTAL OBLIGATIONS | | 177,000 | 80,000 | | 373,000 |
| 18 | | | | | | |
| 19 | METHOD OF FINANCING | | | | | |
| 20 | FEDERAL FUNDS | | | | | |
| 21 | ALLOCATIONS | | 65,971,000 | 11,500,000 4/ | | |
| 22 | UNOBLIGATED CARRY-OVER FROM PRIOR YEAR | | | 3,000 | | |
| 23 | TOTAL FUNDS AVAILABLE FOR OBLIGATION | | | 11,503,000 | | |
| 24 | APPROPRIATIONS REQUIRED | | | | 8,800,000 | 8,929,000 |
| 25 | | | | | | |
| 26 | NON-FEDERAL CONTRIBUTIONS | | | | | |
| 27 | CONTRIBUTIONS | | 177,000 | | | |
| 28 | UNOBLIGATED CARRY-OVER FROM PRIOR YEAR | | | | | |
| 29 | TOTAL FUNDS AVAILABLE FOR OBLIGATION | | 177,000 | | | |
| 30 | CONTRIBUTIONS REQUIRED | | | 80,000 | | 373,000 |
| 31 | 1/ Includes 40,000 for Real Estate Activities. | | | | | |
| 32 | 2/ Includes 20,000 for Real Estate Activities. | | | | | |
| 33 | 3/ Includes 6,000 for Real Estate Activities. 4/ Reflects $1,600,000 assigned as savings and slippage. | | | | | |

| | | | |
|---|---|---|---|
| EFFECTIVE DATE<br>1 JAN 1986 | DIVISION NORTH CENTRAL<br>DISTRICT ST. PAUL | REGION UPPER MISSISSIPPI<br>BASIN MISSISSIPPI HEADWATERS | PROJECT<br>MANKATO AND NORTH MANKATO, MINNESOTA |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986

APPROPRIATION TITLE: Construction General - Local Protection (Flood Control)

PROJECT: Ellicott Creek, New York (Continuing)

LOCATION: The proposed channel improvement is located in the downstream reaches of Ellicott Creek in the towns of Amherst and Tonawanda, NY. Ellicott Creek is the largest tributary of Tonawanda Creek and drains an area of 110 square miles in Erie, Genesee, and Wyoming Counties, NY.

AUTHORIZATION: 1970 Flood Control Act, 1974 Water Resources Development Act, and Senate Act 1493 of December 1981, and Fiscal Year (FY) 1985 Supplemental Appropriations Act (Public Law (PL) 99-88).

BENEFIT TO COST RATIO: The remaining benefit - remaining cost ratio is 1.8 to 1 at 6-5/8 percent. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1979) was 1.5 to 1. In FY 85, the year in which funds were appropriated to resume construction, the benefit-cost ratio was 1.05 to 1 (8-1/8 percent). The benefit-cost ratio was based on the project functioning independently.

SUMMARIZED FINANCIAL DATA:

| | | | Accum. % of Est. Fed. Cost |
|---|---|---|---|
| Estimated Federal Cost | | $13,500,000 | |
| Estimated Non-Federal Cost | | 9,500,000 | |
| Cash Contribution | $470,000 | | |
| Other | $9,030,000 | | |
| Total Estimated Project Cost | | $23,000,000 | |
| Allocations to 30 September 1985 | | $1,895,000 1/ | |
| Conference Allowance for FY 1986 | | 0 | |
| Potential Allocations for FY 1986 | | 1,285,000 2/ | |
| Potential Allocations to date | | 3,180,000 | 24 |
| Allocation Requested for FY 1987 | | 3,000,000 | 46 |
| Scheduled Balance to Complete after FY 1987 | | 7,320,000 | |
| Unscheduled Balance to Complete after FY 1987 | | 0 | |

| STATUS: (1 January 1986) | Completion Schedule |
|---|---|
| Not Started | September 1989 |

PHYSICAL DATA: The plan consists primarily of channelization and diversion channel work. The project consists of about 2.5 miles of channel widening and deepening, which includes the enlargement of the existing diversion channel in Ellicott Creek Park, and about 3.2 miles of diversion channels outside the existing creek channel. A hike/bike path through several parks is included for recreational purposes.

1/ Includes $15,000 received from FY 85 Supplemental funds on 30 September 1985.
2/ Funds appropriated in the FY 85 Supplement allocated in FY 86.

Division: North Central District: Buffalo Region: Great Lakes

4 FEB 1986

JUSTIFICATION: The Ellicott Creek project is urgently needed to reduce flood damages in the lower Ellicott Creek Basin. The downstream portion of Ellicott Creek has been subjected to flooding for a number of years. The 1960 flood inundated about 20 acres in the City and Town of Tonawanda and flooded about 3,200 acres in the town of Amherst. The flooding problem has become more acute in recent years due to increased developmental activity which includes the construction of a major New York State Urban Development Corporation housing project and the construction of the Amherst Campus of the State University of New York at Buffalo. The channel improvement to alleviate flooding is in the town of Amherst and extends from the vicinity of Maple Road to Niagara Falls Boulevard. The area to be protected consists primarily of residential homes, the site of the Amherst Campus of the State University of New York at Buffalo, and the New York State Urban Development Corporation housing project. The average annual benefits are as follows:

| Benefits | Amount (1 October 1985) |
|---|---|
| Flood Control | $1,856,100 |
| Recreation | 295,300 |
| Total | $2,151,400 |

FISCAL YEAR 1987: The requested amount of $3,000,000 will be applied as follows:

| | |
|---|---|
| Initiate Stage 2 Channel/Relocation Construction | $2,445,000 |
| Continue Stage 1 Channel/Relocation Construction | 247,000 |
| Initiate Stage 2 Recreational Facilities Construction | 60,000 |
| Engineering and Design | 45,000 |
| Supervision and Administration | 203,000 |
| Total | $3,000,000 |

NON-FEDERAL COST: Consistent with the project authorization and in accordance with the Local Cooperation Agreement executed on 20 January 1984, the local share of the flood control portion amounts to 41 percent and local interests have agreed to this financing. Local interests are required to provide all lands, easements, required disposal areas, and rights-of-way, presently estimated at $3,980,000; accomplish all relocations of highways, highway bridges, buildings, utilities, and special facilities, presently estimated at $5,050,000; contribute 50 percent of the first cost of recreation facilities, presently estimated at $470,000; and take over, maintain, and operate the project after completion, presently estimated at $163,300 annually.

STATUS OF LOCAL COOPERATION: New York State Department of Environmental Conservation furnished a Letter of Intent on 25 October 1976 to cooperate toward construction of the project. The State of New York and all other involved non-Federal concerns have shown a continued [illegible]el of interest and support for the project. The State of New York, on 17 March 1981 pursuant to the Eminent Doma[illegible]cedure Law, held a Public Hearing demonstrating again their total commitment toward this project. The formal Local Cooperation Agreement was requested on 22 June 1983 upon approval of the Phase II GDM and completely executed by all parties on 20 January 1984.

COMPARISON OF FEDERAL COST ESTIMATES: The current estimate of $13,500,000 is a decrease of $300,000 from the last estimate ($13,800,000, Oct 84) presented to Congress. This change includes a decrease of $213,000 for adjustments in the estimated inflation allowance through the construction period and a decrease of $87,000 in Supervision and Administration based on a reanalysis of requirements.

STATUS OF ENVIRONMENTAL STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The draft Environmental Impact Statement was submitted to the Council on Environmental Quality on 7 July 1976. A revised draft Environmental Impact Statement was submitted to the Environmental Protection Agency on 2 September 1978. The final Environmental Impact Statement was submitted to the Environmental Protection Agency on 8 May 1980. A final EIS Supplement was filed with EPA on 15 April 1983.

The provisions of Section 404 of the Clean Water Act have been met by a Section 404(b)(1) Evaluation completed on 12 November 1982, a Public Notice issued on 21 December 1982, a blanket Certification issued by the State of New York on 6 August 1979, and the District Commander's signature on an EIS Supplement on 15 April 1983.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1972. Funds to initiate construction were appropriate in FY 1979. Plans and Specifications for Stage 1 were approved 7 July 1983 and for Stage 2 are scheduled for approval in December 1986. A construction contract is scheduled for award in July 1986 for Stage 1 and July 1987 for Stage 2. The Flood Control Act of 1970 authorized construction of a dam and multi-purpose reservoir at the Sandridge site with downstream channel improvements on Ellicott Creek. Further studies indicated a lack of local support for a multi-purpose reservoir and a flood control channel plan was then considered. The Water Resources Development Act of 1974 authorized construction of remedial flood control measures in the downstream reach that would be compatible with the channel plan under consideration. However, the downstream channel portion will not function independently, but requires the upstream channel section to adequately capture flood flows. Authorization of the project as now proposed is provided for in Senate Act 1493 dated December 1981. Since 1981, the New York State Department of Transportation (NYSDOT) while constructing the Lockport Expressway also constructed a portion of the north diversion

OTHER INFORMATION (Cont'd):

channel utilizing channel excavation for highway embankment. This effort reduced highway cost approximately $1,800,000 and the flood control project $3,000,000. The State and county have constructed two bridges included in the project at an approximate cost of $1,650,000 and are about to go into a contract on a third bridge in 1986. The contract to be let by the NYSDOT includes widening the north-south travel lanes of a two-mile stretch of Niagara Falls Boulevard, construction of a center turning lane, demolition of a railroad overpass and rebuilding the Bridge spanning Ellicott Creek.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: North Central
District: Buffalo

Project: Ellicott Creek, New York

| Item | Estimates Presented to Congress ($1,000) | | | | |
|---|---|---|---|---|---|
| | Original Baseline (1) | Cumulative Changes (2) | Last (3) | Incremental Change (4) | Current (5) |
| Federal Cost | 12,000 | | 13,800 1/ | | 13,500 1/ 2/ |
| (Price Level) | (Oct 77) | | (Oct 84) | | |
| Reason for Change | | (1,800) 1/ | | (-300) 2/ | |
| a. Price Escalation | | 6,468 | | -213 | |
| b. Design Changes | | -1,522 | | 0 | |
| c. Additional Function Added Under General Authorization | | 0 | | 0 | |
| d. Authorized Modification | | 0 | | 0 | |
| e. Post-Contract Award and other Estimating Adjustments | | -3,146 | | - 87 3/ | |
| f. Schedule Changes | | 0 | | 0 | |
| g. Sundry | | 0 | | 0 | |
| h. Real Estate | | 0 | | 0 | |

1/ Includes an allowance for estimated inflation through the construction period.

2/ Includes a decrease of $213 for adjustments in the estimated inflation allowance through the construction period.

3/ Includes a decrease of $87 for reanalysis of requirements for Supervision and Administration.

REPORTS CONTROL SYMBOL: DAEN-CWB-13

| | |
|---|---|
| APPROPRIATION TITLE: CONSTRUCTION GENERAL | CLASSIFICATION: LOCAL PROTECTION PROJECT (FLOOD CONTROL) |

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM (a) | PROJECT COST ESTIMATE (b) | TOTAL TO 30 SEP 19 85 (c) | CURRENT FY 19 86 (d) | BUDGET FY 19 87 (e) | BALANCE TO COMPLETE AFTER FY 19 87 (f) |
|---|---|---|---|---|---|---|
| 1 | 1970 F.C. Act and 1974 WRD Act and Senate | | | | | |
| 2 | Act 1493 dated December 1981 | | | | | |
| 3 | | | | | | |
| 4 | RELOCATIONS | 1,431,000 | 0 | 165,000 | 460,000 | 806,000 |
| 5 | CHANNELS | 8,924,000 | 0 | 868,000 | 2,232,000 | 5,824,000 |
| 6 | RECREATION FACILITIES | 740,000 | 0 | 0 | 170,000 | 570,000 |
| 7 | ENGINEERING AND DESIGN | 1,920,000 | 1,635,000 | 150,000 | 45,000 | 90,000 |
| 8 | SUPERVISION AND ADMINISTRATION | 955,000 | 245,000 | 117,000 | 203,000 | 390,000 |
| 9 | | | | | | |
| 10 | TOTAL APPLIED COST (CofE Funds & | | | | | |
| 11 | Non-Fed. Contrib.) | 13,970,000 | 1,880,000 | 1,300,000 | 3,110,000 | 7,680,000 |
| 12 | Undistributed Costs (None) | | | | | |
| 13 | TOTAL PROJECT COST (CofE Funds & | | | | | |
| 14 | Non-Fed. Contrib.) | 13,970,000 | 1,880,000 | 1,300,000 | 3,110,000 | 7,680,000 |
| 15 | Pending Adjustments (None) | | | | | |
| 16 | TOTAL COST (CofE Funds & Non-Fed. | | | | | |
| 17 | Contrib.) | 13,970,000 | 1,880,000 | 1,300,000 | 3,110,000 | 7,680,000 |
| 18 | | | | | | |
| 19 | FEDERAL FUNDS | | | | | |
| 20 | TOTAL APPLIED COST | 13,500,000 | 1,880,000 | 1,300,000 | 3,000,000 | 7,320,000 |
| 21 | Undistributed Cost (None) | | | | | |
| 22 | TOTAL PROJECT COST | 13,500,000 | 1,880,000 | 1,300,000 | 3,000,000 | 7,320,000 |
| 23 | Pending Adjustments (None) | | | | | |
| 24 | TOTAL COST | 13,500,000 | 1,880,000 | 1,300,000 | 3,000,000 | 7,320,000 |
| 25 | Undelivered Orders | | 0 | 0 | | |
| 26 | TOTAL OBLIGATIONS | | 1,880,000 | 1,300,000 | 3,000,000 | 7,320,000 |
| 27 | | | | | | |
| 28 | | | | | | |
| 29 | | | | | | |
| 30 | | | | | | |
| 31 | | | | | | |
| 32 | | | | | | |
| 33 | | | | | | |

| | | | |
|---|---|---|---|
| EFFECTIVE DATE 1 JAN 86 | DIVISION NORTH CENTRAL<br>DISTRICT BUFFALO | REGION GREAT LAKES<br>BASIN EASTERN LAKE ERIE | PROJECT ELLICOTT CREEK, NEW YORK |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986

REPORTS CONTROL SYMBOL: DAEN-CWB-13

| | |
|---|---|
| APPROPRIATION TITLE: CONSTRUCTION GENERAL | CLASSIFICATION:<br>LOCAL PROTECTION PROJECT (FLOOD CONTROL) |

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM | PROJECT COST ESTIMATE | TOTAL TO 30 SEP 19 85 | CURRENT FY 19 86 | BUDGET FY 19 87 | BALANCE TO COMPLETE AFTER FY 19 87 |
|---|---|---|---|---|---|---|
| | (a) | (b) | (c) | (d) | (e) | (f) |
| 1 | NON-FEDERAL CONTRIBUTIONS | | | | | |
| 2 | TOTAL APPLIED COST | 470,000 | 0 | 0 | 110,000 | 360,000 |
| 3 | Undistributed Cost (None) | | | | | |
| 4 | TOTAL PROJECT COST | 470,000 | 0 | 0 | 110,000 | 360,000 |
| 5 | Pending Adjustments (None) | | | | | |
| 6 | TOTAL COST | 470,000 | 0 | 0 | 110,000 | 360,000 |
| 7 | Undelivered Orders (None) | | | | | |
| 8 | TOTAL OBLIGATIONS | | 0 | 0 | 110,000 | 360,000 |
| 9 | | | | | | |
| 10 | METHOD OF FINANCING | | | | | |
| 11 | FEDERAL FUNDS | | | | | |
| 12 | Allocations | | 1,895,000 | 1,285,000 | | |
| 13 | Unobligated carryover from prior year | | | +15,000 | | |
| 14 | Total funds available for obligation | | | 1,300,000 | | |
| 15 | Appropriations required | | | | 3,000,000 | 7,320,000 |
| 16 | | | | | | |
| 17 | NON-FEDERAL FUNDS | | | | | |
| 18 | Cash Contributions | | 0 | 0 | | |
| 19 | Unobligated carryover from prior year | | | 0 | | |
| 20 | Total funds available for obligation | | | 0 | | |
| 21 | Cash Contributions required | 470,000 | 0 | 0 | 110,000 | 360,000 |
| 22 | Other Costs | | | | | |
| 23 | Lands and Damages | 3,980,000 | 400,000 | 3,580,000 | 0 | 0 |
| 24 | Relocations | 5,050,000 | 2,026,000 | 0 | 880,000 | 2,144,000 |
| 25 | Total Non-Federal Costs | 9,500,000 | 2,426,000 | 3,580,000 | 990,000 | 2,504,000 |
| 26 | | | | | | |
| 27 | | | | | | |
| 28 | | | | | | |
| 29 | | | | | | |
| 30 | | | | | | |
| 31 | | | | | | |
| 32 | | | | | | |
| 33 | | | | | | |

| | | | |
|---|---|---|---|
| EFFECTIVE DATE<br>1 JAN 86 | DIVISION NORTH CENTRAL<br>DISTRICT BUFFALO | REGION GREAT LAKES<br>BASIN EASTERN LAKE ERIE | PROJECT<br>ELLICOTT CREEK, NEW YORK |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986

APPROPRIATION TITLE: Construction, General - Reservoirs (Flood Control)

PROJECT: Ames Lake, Iowa (Continuing)

LOCATION: The Ames Lake project, as authorized, is not currently supported by local interests. Reevaluation studies are underway to develop alternatives acceptable to local interests. The authorized project is located on the Skunk River in Story County, Iowa, about five miles upstream from the city of Ames. Major project features would include a dam constructed of compacted impervious earth with gated outlet works and spillway; a subimpoundment forming a 30-acre lake by blocking a ravine with embankment for access road crossing the dam; relocations consisting of roads, telephone and power lines; and remedial protection for Story City by levee and street raises. The conservation pool would have a surface area of 2,100 acres and the full flood control pool would have a surface area of 5,000 acres. The project was authorized to store water for flood control, water quality control, recreation, and fish and wildlife benefits.

AUTHORIZATION: 1965 Flood Control Act

BENEFIT-COST RATIO: No remaining benefit-remaining cost ratio has been calculated because the project is being reevaluated. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1971) was 1.2 to 1. The benefit-cost ratio was based on the project functioning independently.

| SUMMARIZED FINANCIAL DATA | | Accum. % of Est. Fed. Cost |
|---|---|---|
| Estimated Federal Cost | $56,100,000 | |
| Estimated Non-Federal Cost | 0 | |
| Total Estimated Project Cost | $56,100,000 | |
| Allocations to 30 September 1985 | 1,157,000 | |
| Conference Allowance for FY 1986 | 150,000 | |
| Allocation for FY 1986 | 150,000 | |
| Allocations to Date | 1,307,000 | 2 |
| Allocation Requested for FY 1987 | 250,000 | 3 |
| Scheduled Balance to Complete after FY 1987 | 850,000 1/ | |
| Unscheduled Balance to Complete after FY 1987 | 53,693,000 | |

| STATUS: (1 January 1986) | PERCENT COMPLETE | COMPLETION SCHEDULE |
|---|---|---|
| Project Not Yet Started | | |

1/ Reflects funds for completion of General Design Memorandum.

Division: North Central

District: Rock Island

4 FEB 1986

Region: Upper Mississippi

JUSTIFICATION: The primary purpose of the authorized project is to reduce the flood damages in the Skunk River valley in Story, Polk, and Jasper counties, Iowa, on about 64,000 acres of which approximately 56,000 acres are utilized for crop and pasture purposes. Reservoir operation would reduce total average annual flood damages by about 48 percent. In addition, the reservoir would supplement low flows and provide water quality control benefits. Fish and wildlife conservation would be realized in downstream channels and in the reservoir area.

Since 1972 flooding has occurred every year except 1981. Estimated flood damages in the basin amounted to $42,000,000 at current prices. Approximately $12,200,000 of past flood damages would have been prevented if the authorized project was in place. The most recent flood, June 1984, caused $3,315,000 damages at current prices.

FISCAL YEAR 1987: The requested amount will be applied as follows:

| | |
|---|---|
| Complete the General Reevaluation Report and initiate the General Design Memorandum | $ 250,000 |
| Total | $ 250,000 |

Funds requested are based on an economical rate of progress.

NON-FEDERAL COST: None required.

STATUS OF LOCAL COOPERATION: By letter dated 10 September 1973, the Governor of Iowa advised "There is general agreement that the project provides definitive flood control benefits to the downstream landowners. However, the costs associated with it and the values to be foregone as a result of the project outweigh the benefits. Therefore, at this time, the State's position must be that of general opposition to the project." Due to the State's position in regard to the project, it was reclassified from the "active" to "inactive" category on 20 June 1974. Recently there has been renewed Congressional and local interest in this project. By letter dated 6 March 1984, the city of Ames, Iowa, provided a copy of a resolution by the City Council adopted 28 February 1984, requesting reactivation of the project. The project was approved for reactivation on 2 July 1984.

COMPARISON OF FEDERAL COST ESTIMATE: The current Federal Cost Estimate of $56,100,000 is a decrease of $3,400,000 from the latest estimate ($59,500,000) presented to Congress. This change includes decreases of $3,300,000 for lower price level to 1 October 1985, and decreases of $100,000 for Lands and Damages based on a reanalysis of requirements.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT:

a. Status of Environmental Impact Statement: The final EIS was submitted to CEQ on 14 December 1970. This statement was among the first to be prepared in compliance with Public Law 91-190 and was prepared in accordance with the directives and guidelines at that time. Due to revised Federal guidelines, an updated and comprehensive five-point statement was subsequently prepared with the final EIS being submitted to CEQ on 14 December 1974. Because of revisions to NEPA requirements, a new draft Environmental Impact Statement is scheduled to be filed with the Environmental Protection Agency in the third quarter of Fiscal Year 1987 and a new final Environmental Impact Statement is scheduled to be filed with the Environmental Protection Agency in the first quarter of Fiscal Year 1988.

b. Compliance with Clean Water Act: The provisions of Section 404 of the Clean Water Act are scheduled to be met by a Section 404(b)(1) Evaluation, a Public Notice issued, a Certification from the State of Iowa, the District Commander's signature on the Evaluation Report, all in the first quarter of Fiscal Year 1988.

OTHER INFORMATION: Initial planning funds were appropriated in FY 1967 and initial construction funds were appropriated in FY 1971. Due to the State's lack of support for the project, it was reclassified from the "active" to "inactive" category on 20 June 1974. Prior to the placement of the project in the "inactive" category, opposition to the project was expressed from upstream landowners and conservationists during previous study efforts. However, there was also strong support for the project from Congressional leaders and downstream landowners.

Recent interest in the project has been expressed by the Ames City Council and downstream interests which lead to the reactivation of the project on 2 July 1984 to seek alternatives to the authorized project. Opposition was also expressed by upstream interests at a public workshop held in Ames on 12 December 1984.

4 FEB 1986

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

**Division:** North Central
**District:** Rock Island

**Project:** Ames Lake, Iowa

|  | Estimates Presented to Congress ($1,000) |  |  |  |  |
|---|---|---|---|---|---|
| Item | Original Baseline (1) | Cumulative Changes (2) | Last (3) | Incremental Change (4) | Current (5) |
| Federal Cost | 15,400 |  | 59,500 |  | 56,100 |
| (Price Level) | (JUL 69) |  | (OCT 84) |  |  |
| Reason for Change |  | (44,100) |  | (-3,400) |  |
| a. Price Escalation |  | 25,207 |  | 0 |  |
| b. Design Changes |  | 0 |  | 0 |  |
| c. Additional Function Added Under General Authorization |  | 0 |  | 0 |  |
| d. Authorized Modification |  | 0 |  | 0 |  |
| e. Post-Contract Award or Other Estimating Adjustments |  | 2,580 |  | 0 |  |
| f. Schedule Changes |  | 0 |  | 0 |  |
| g. Sundry |  | 116 |  | - 100 1/ |  |
| h. Real Estate |  | 16,197 |  | -3,300 |  |

1/ Includes decrease of $100 for Lands and Damages based on a reanalysis of requirements.

REPORTS CONTROL SYMBOL: DAEN-CWB-13

| | |
|---|---|
| APPROPRIATION TITLE: CONSTRUCTION GENERAL | CLASSIFICATION: RESERVOIRS (FLOOD CONTROL) |

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM | PROJECT COST ESTIMATE | TOTAL TO 30 SEP 19 85 | CURRENT FY 19 86 | BUDGET FY 19 87 | BALANCE TO COMPLETE AFTER FY 19 87 |
|---|---|---|---|---|---|---|
| | (a) | (b) | (c) | (d) | (e) | (f) |
| 1 | LANDS AND DAMAGES | $17,830,000 | 140,000 | 0 | 0 | 17,690,000 |
| 2 | RELOCATIONS | 10,710,000 | 0 | 0 | 0 | 10,710,000 |
| 3 | RESERVOIRS | 890,000 | 0 | 0 | 0 | 890,000 |
| 4 | DAM | 19,520,000 | 0 | 0 | 0 | 19,520,000 |
| 5 | BLDG, GROUNDS & UTILITIES | 900,000 | 0 | 0 | 0 | 900,000 |
| 6 | ENGINEERING AND DESIGN | 3,620,000 | 867,000 | 183,000 | 225,000 | 2,345,000 |
| 7 | SUPERVISION & ADMINISTRATION | 2,630,000 | 94,000 | 23,000 | 25,000 | 2,488,000 |
| 8 | | | | | | |
| 9 | | | | | | |
| 10 | TOTAL APPLIED COSTS (Federal Funds Only) | 56,100,000 | 1,101,000 | 206,000 | 250,000 | 54,543,000 |
| 11 | Undistributed Costs (None) | | | | | |
| 12 | TOTAL PROJECT COSTS (Federal Funds Only) | 56,100,000 | 1,101,000 | 206,000 | 250,000 | 54,543,000 |
| 13 | Pending Adjustments (None) | | | | | |
| 14 | TOTAL COSTS (Federal Funds Only) | 56,100,000 | 1,101,000 | 206,000 | 250,000 | 54,543,000 |
| 15 | Undelivered Orders | | 12,000 | -12,000 | | |
| 16 | TOTAL OBLIGATIONS | | 1,113,000 | 194,000 | 250,000 | 54,543,000 |
| 17 | | | | | | |
| 18 | | | | | | |
| 19 | METHOD OF FINANCING | | | | | |
| 20 | FEDERAL FUNDS | | | | | |
| 21 | Allocations | | 1,157,000 | 150,000 | | |
| 22 | Unobligated Carryover from Prior Year | | | 44,000 | | |
| 23 | Total Funds Available for Obligation | | | 194,000 | | |
| 24 | Appropriations Required | | | | 250,000 | 54,543,000 |
| 25 | | | | | | |
| 26 | NON-FEDERAL FUNDS | | | | | |
| 27 | Cash Contributions | 0 | | | | |
| 28 | Other Costs | 0 | | | | |
| 29 | Lands & Damages | (0) | | | | |
| 30 | Relocations | (0) | | | | |
| 31 | Other | (0) | | | | |
| 32 | TOTAL NON-FEDERAL COSTS | 0 | | | | |
| 33 | | | | | | |

| | | | |
|---|---|---|---|
| EFFECTIVE DATE 1 Jan 86 | DIVISION NORTH CENTRAL<br>DISTRICT ROCK ISLAND | REGION UPPER MISSISSIPPI<br>BASIN ROCK-MISS-DES MOINES | PROJECT AMES LAKE, IOWA |

ENG FORM 1 SEP 78 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE.

APPROPRIATION TITLE: Construction, General-Reservoirs (Recreation and Fish and Wildlife Enhancement)

PROJECT: Des Moines Recreational River and Greenbelt, Iowa (Continuing)

LOCATION: The greenbelt area is located along both banks of the Des Moines River in central Iowa and extends from where relocated U.S. Highway 92 crosses the Des Moines River near Harvey, upstream approximately 169 river miles to U.S. Highway 20 at Fort Dodge. It includes the Corps operated Lake Red Rock and Saylorville Lake projects. The Des Moines Recreational River and Greenbelt project will include, but not be limited to: (1) the construction, operation, and maintenance of recreational facilities and streambank stabilization structures; (2) the operation and maintenance of all structures constructed before the date of authorization of this project (other than any such structure operated and maintained by any person under a permit or agreement with the Secretary (of Army)); (3) such tree plantings, trails, vegetation, and wildlife protection and development and other activities as will enhance the natural environment for recreational purposes; and (4) the prohibition or limitation by the Secretary of the killing, wounding, or capturing at any time of any wild bird or animal in such areas as may be directed by the Secretary. In carrying out the project, the Secretary may acquire by purchase, donation, exchange, or otherwise, land and interests therein, as the Secretary determines are necessary to carry out such project, subject to the provisions of Public Law 99-88.

AUTHORIZATION: FY 85 Supplemental Appropriations Act, P.L. 99-88.

BENEFIT-COST RATIO: The remaining benefit-remaining cost ratio is not available because monetary benefits have not been quantified.

| SUMMARIZED FINANCIAL DATA | | | Accum. % of Est. Fed. Cost |
|---|---|---|---|
| Estimated Federal Cost | | $ 4,750,000 | |
| Estimated Non-Federal Cost | | 4,750,000 1/ | |
| Cash Contribution | $4,750,000 1/ | | |
| Other | 0 | | |
| Total Estimated Project Cost | | $ 9,500,000 | |
| Allocations to 30 September 1985 | | 15,000 | |
| Conference Allowance for FY 1986 | | 0 | |
| Potential Allocation for FY 1986 | | 235,000 | |
| Potential Allocations through FY 1986 | | 250,000 | 5 |
| Allocations Requested for FY 1987 | | 350,000 | 13 |
| Scheduled Balance to Complete after FY 1987 | | 4,150,000 | |
| Unscheduled Balance to Complete after FY 1987 | | 0 | |

| STATUS: (1 January 1986) | PERCENT COMPLETE | COMPLETION SCHEDULE |
|---|---|---|
| Project Not Yet Started | | Sep 91 |

1/ Tentative estimate assuming all project measures will be for recreation. Project measures also include fish and wildlife enhancement and bank stabilization which would employ different cost sharing criteria satisfactory to the Secretary of the Army or established by legislation.

Division: North Central District: Rock Island Region: Upper Mississippi

JUSTIFICATION: The project will provide central Iowa and the city of Des Moines with environmental protection of scarce river bottom timberlands and greatly enhance opportunities for recreation. The greenbelt will join together two Federal Lake projects (Red Rock and Saylorville), the downstream Saylorville Corridor, and a number of State, city, and local parks. Iowa has no National Park and little public land, and the creation of the Des Moines Recreational River and Greenbelt will enhance the utility and value of the little public land available. Other values of the project include watershed protection, wildlife enhancement, preservation and management of timber resources for environmental purposes, control of floodplain development, improved aesthetics, and improved public access to the Des Moines River.

FISCAL YEAR 1987: The requested amount will be applied as follows:

| | | |
|---|---|---|
| Complete: | General Design Memorandum and final Environmental Impact Statement | $350,000 |

Funds requested are based on an efficient and effective rate of preconstruction planning and project implementation with project construction completion scheduled for September 1991.

NON-FEDERAL COSTS: Consistent with the cost-sharing and financing concepts agreed to by the Administration and Senate majority leadership, cost sharing would be as follows:

a. Recreation would be cost shared 50-50 percent with local interests responsible for operation and maintenance.

b. Fish and wildlife enhancement will be a Federal cost when the enhancement provides benefits that are determined to be national, including benefits to species that are identified by the National Marine Fisheries Service as of national economic importance, species that are subject to treaties or international convention to which the United States is a party, anadromous fish, or when such enhancement is designed to benefit species that have been listed as threatened or endangered by the Secretary of the Interior under the terms of the endangered Species Act, as amended. When benefits of enhancement do not qualify as national, 25 percent of the enhancement costs will be provided by non-Federal interests except when the benefits are limited to a single state in which case non-Federal interests will be required to contribute 33-1/3 percent.

c. Prevention of erosion to Federal lands would be at Federal expense. Prevention of erosion to private lands would be 100 percent non-Federal. Prevention of erosion to lands purchased as part of the project will be based on the purpose for acquisition; for example, prevention of erosion on lands bought for recreational purposes would be 50-50 percent with local interests responsible for operation and maintenance.

The investment required of local interests in construction of the project, assuming that the project is 100% recreation, is estimated at $4,750,000 broken down as follows:

| | |
|---|---|
| Recreation | $4,000,000 |
| Engineering and Design | 510,000 |
| Supervision and Administration | 240,000 |
| Total | $4,750,000 |

The above estimate is subject to change during preparation of the General Design Memorandum based upon specific identification of projects for purposes of recreation, fish and wildlife enhancement, and streambank stabilization.

STATUS OF LOCAL COOPERATION: An Advisory Committee was established as required by the authorization for consultation with the Department of the Army consisting of three Corps of Engineers' appointees, one person from the city of Des Moines, and one from each other incorporated municipality within the greenbelt, two from each of eight counties in the greenbelt, and five from the State of Iowa. Local sponsors were requested to provide letters of assurance stating they understand the terms of local cooperation and are willing to participate in Federally assisted projects. Letters of assurance have been furnished by Polk County, City of Johnston, City of Swan, City of Ft. Dodge, Iowa Conservation Commission, Marion County, Boone County, and Jasper County.

COMPARISON OF FEDERAL COST ESTIMATE: The current Federal cost estimate of $4,750,000 is an increase of $900,000 from the latest estimate ($3,850,000-October 1983) presented to Congress. This change includes increases of $150,000 based on higher price levels to 1 October 1985 and $750,000 for an estimated inflation allowance from 1 October 1985 through the construction period.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT:

a. Status of Environmental Impact Statement: A draft Environmental Impact Statement will be coordinated in the third quarter of Fiscal Year 1987 as part of the draft General Design Memorandum. The final Environmental Impact Statement will be filed with the Environmental Protection Agency in the first quarter of Fiscal Year 1988.

b. Compliance with Clean Water Act: The provisions of the Clean Water Act, if required, are scheduled to be met by a Section 404 (b)(1) Evaluation in the third quarter of Fiscal Year 1987, a Public Notice issued in the third quarter of Fiscal Year 1987, a Certification from the State of Iowa in the third quarter of Fiscal Year 1987, and the District Commander's signature on the Evaluation Report in the fourth quarter of Fiscal Year 1987.

OTHER INFORMATION: The initial construction contract is scheduled for award in June 1988.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: North Central
District: Rock Island

Project: Des Moines Recreational River and Greenbelt, Iowa

| Item | Original Baseline (1) | Cumulative Changes (2) | Last (3) | Incremental Change (4) | Current (5) |
|---|---|---|---|---|---|
| | Estimates Presented to Congress ($1,000) | | | | |
| Federal Cost<br>(Price Level) | 3,850<br>(Oct 1983) | | 3,850<br>(Oct 1983) | | 4,750 1/ |
| Reason for Change | | 0 | | 900 1/ | |
| a. Price Escalation | | 0 | | 900 | |
| b. Design Changes | | 0 | | 0 | |
| c. Additional Function Added Under General Authorization | | 0 | | 0 | |
| d. Authorized Modification | | 0 | | 0 | |
| e. Post-Contract Award and Other Estimating Adjustments | | 0 | | 0 | |
| f. Schedule Changes | | 0 | | 0 | |
| g. Sundry | | 0 | | 0 | |
| h. Real Estate | | 0 | | 0 | |

1/ Includes $750 allowance for estimated inflation from 1 October 1985 through the construction period.

REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: PROJECT SPECIFICALLY AUTHORIZED BY CONGRESS (RECREATION)

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM (a) | PROJECT COST ESTIMATE (b) | TOTAL TO 30 SEP 19 85 (c) | CURRENT FY 1986 (d) | BUDGET FY 1987 (e) | BALANCE TO COMPLETE AFTER FY 19 87 (f) |
|---|---|---|---|---|---|---|
| 1 | RECREATION FACILITIES | $8,000,000 | 0 | $ 0 | $ 0 | $8,000,000 |
| 2 | ENGINEERING AND DESIGN | 1,020,000 | 0 | 230,000 | 320,000 | 470,000 |
| 3 | SUPERVISION AND ADMINISTRATION | 480,000 | 0 | 20,000 | 30,000 | 430,000 |
| 4 | | | | | | |
| 5 | | | | | | |
| 6 | TOTAL APPLIED COSTS (Federal Funds & | 9,500,000 | 0 | 250,000 | 350,000 | 8,900,000 |
| 7 | Non-Federal Contributions) | | | | | |
| 8 | Undistributed Costs (None) | | | | | |
| 9 | TOTAL PROJECT COSTS (Federal Funds & | 9,500,000 | 0 | 250,000 | 350,000 | 8,900,000 |
| 10 | Non-Federal Contributions) | | | | | |
| 11 | Pending Adjustments (None) | | | | | |
| 12 | TOTAL COSTS (Federal Funds & | 9,500,000 | 0 | 250,000 | 350,000 | 8,900,000 |
| 13 | Non-Federal Contributions) | | | | | |
| 14 | | | | | | |
| 15 | | | | | | |
| 16 | FEDERAL FUNDS | | | | | |
| 17 | TOTAL APPLIED COSTS | 4,750,000 | 0 | 250,000 | 350,000 | 4,150,000 |
| 18 | Undistributed Costs (None) | | | | | |
| 19 | TOTAL PROJECT COSTS | 4,750,000 | 0 | 250,000 | 350,000 | 4,150,000 |
| 20 | Pending Adjustments (None) | | | | | |
| 21 | TOTAL COSTS | 4,750,000 | 0 | 250,000 | 350,000 | 4,150,000 |
| 22 | Undelivered Orders | | | | | |
| 23 | TOTAL OBLIGATIONS | | 0 | 250,000 | 350,000 | 4,150,000 |
| 24 | | | | | | |
| 25 | | | | | | |
| 26 | NON-FEDERAL CONTRIBUTIONS | | | | | |
| 27 | TOTAL APPLIED COSTS | 4,750,000 | 0 | 0 | 0 | 4,750,000 |
| 28 | Undistributed Costs (None) | | | | | |
| 29 | TOTAL PROJECT COSTS | 4,750,000 | 0 | 0 | 0 | 4,750,000 |
| 30 | Pending Adjustments (None) | | | | | |
| 31 | TOTAL COSTS | 4,750,000 | 0 | 0 | 0 | 4,750,000 |
| 32 | Undelivered Orders | | | | | |
| 33 | TOTAL OBLIGATIONS | | 0 | 0 | 0 | 4,750,000 |

EFFECTIVE DATE 1 Jan 86

DIVISION NORTH CENTRAL

DISTRICT ROCK ISLAND

REGION UPPER MISSISSIPPI

BASIN ROCK-MISS-DES MOINES

PROJECT DES MOINES RECREATIONAL RIVER & GREENBELT, IOWA

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE.

REPORTS CONTROL SYMBOL: DAEN-CWB-13

| | |
|---|---|
| APPROPRIATION TITLE: CONSTRUCTION GENERAL | CLASSIFICATION: PROJECT SPECIFICALLY AUTHORIZED BY CONGRESS (RECREATION) |

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 1986 AND 1987

| LINE NO | ITEM (a) | PROJECT COST ESTIMATE (b) | TOTAL TO 30 SEP 1985 (c) | CURRENT FY 1986 (d) | BUDGET FY 1987 (e) | BALANCE TO COMPLETE AFTER FY 1987 (f) |
|---|---|---|---|---|---|---|
| 1 | METHOD OF FINANCING | | | | | |
| 2 | FEDERAL FUNDS | | | | | |
| 3 | Allocations | | $15,000 | 235,000 | | |
| 4 | Unobligated Carryover from Prior Year | | | 15,000 | | |
| 5 | Total Funds Available for Obligation | | | 250,000 | | |
| 6 | Appropriations Required | | | | 350,000 | 4,150,000 |
| 7 | | | | | | |
| 8 | | | | | | |
| 9 | NON-FEDERAL COSTS | | | | | |
| 10 | Cash Contributions | 4,750,000 | 0 | 0 | 0 | 4,750,000 |
| 11 | Other Costs | 0 | | | | |
| 12 | Lands & Damages | (0) | | | | |
| 13 | Relocations | (0) | | | | |
| 14 | Other | (0) | | | | |
| 15 | TOTAL NON-FEDERAL COSTS | 4,750,000 | 0 | 0 | 0 | 4,750,000 |
| 16 | | | | | | |
| 17 | | | | | | |
| 18 | | | | | | |
| 19 | | | | | | |
| 20 | | | | | | |
| 21 | | | | | | |
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| | | | |
|---|---|---|---|
| EFFECTIVE DATE<br>1 JAN 86 | DIVISION NORTH CENTRAL<br>DISTRICT ROCK ISLAND | REGION UPPER MISSISSIPPI<br>BASIN ROCK-MISS-DES MOINES | PROJECT DES MOINES RECREATIONAL RIVER & GREENBELT, IOWA |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE.

APPROPRIATION TITLE: Construction, General - Reservoirs (Flood Control)

**PROJECT:** Lake Darling, Souris River, North Dakota (Continuing)

**LOCATION:** On the Souris River in Ward, Renville, McHenry, and Bottineau Counties in northwestern North Dakota. The existing Lake Darling Dam, which is to be raised, is located about 20 miles northwest of Minot, North Dakota. The project also includes features at the communities of Sawyer and Velva and at various locations along the 358-mile U.S. portion of the Souris River.

**AUTHORIZATION:** 1982 Energy and Water Development Appropriations Act, Public Law 97-88.

**BENEFIT-COST RATIO:** The remaining benefit-remaining cost ratio is 2.0 to 1 at 5 1/8 percent. The benefit-cost ratio for the fiscal year for which initial construction funds were made available (FY 1982) was 2.6 to 1. The benefit-cost ratio was based on the project functioning independently.

| SUMMARIZED FINANCIAL DATA | | | Accum. % of Est. Fed. Cost |
|---|---|---|---|
| Estimated Federal Cost | | $59,200,000 | |
| Estimated Non-Federal Cost | | 4,880,000 | |
| Cash Contribution | $ 0 | | |
| Other | $4,880,000 | | |
| Total Estimated Project Cost | | $64,080,000 | |
| Allocations to 30 September 1985 | | $ 6,050,000 | |
| Conference Allowance for FY 1986 | | 3,400,000 | |
| Allocation for FY 1986 | | 3,400,000 | |
| Allocations to Date | | 9,450,000 | 16 |
| Allocation Requested for FY 1987 | | 2,000,000 | 19 |
| Scheduled Balance to Complete after FY 1987 | | 47,750,000 1/ | |
| Unscheduled Balance to Complete after FY 1987 | | 0 | |

| STATUS: (1 January 1986) | PERCENT COMPLETE | COMPLETION SCHEDULE |
|---|---|---|
| Velva Unit | 10 | Dec 1986 |
| Lake Darling Unit | 0 | Jun 1991 |
| Entire Project | 0 | Jun 1991 |

1/ Last year, only the Velva Unit was scheduled for completion. This year, the entire project is scheduled for completion.

DIVISION: North Central DISTRICT: St. Paul REGION: Souris-Red-Rainy

Lake Darling, Souris River, North Dakota

## PHYSICAL DATA

**Lands and Damages:**

| | |
|---|---|
| Easements | 1,180 acres |
| Type | Predominantly agricultural |

**Relocations:**

| | |
|---|---|
| Road Stabilization - 4 reservoir crossings | $3,099,000 |
| Railroad Stabilization - 1 reservoir crossing | 459,000 |

**Dam:**

| | |
|---|---|
| Type | Existing earth fill, to be raised approx. 8 feet to provide for a 4-foot raise in the design pool level. |
| Length | 3,700 feet |
| Height | Raised dam is 41 feet above stream bed |

**Reservoir Capacity:** (acre-feet)

| | Existing | Raised Dam |
|---|---|---|
| Conservation | 99,000 | 99,000 |
| Flood Control | 22,000 | 114,000 |
| Total | 121,000 | 213,000 |

**Local Improvements:**

| | |
|---|---|
| Levees | 8.1 miles |
| Channels | 3.4 miles |
| Pumping Plants | 7 |

JUSTIFICATION: Large floods originating primarily from snowmelt in the Canadian portion of the Souris River basin cause extensive damages and much human suffering and hardship in the basin. In 1980, the population of the entire Souris River basin in the United States totaled 95,000. The major population center in the basin is Minot with a 1980 census of 32,886. Since 1936, Lake Darling Reservoir, operated by the U.S. Fish and Wildlife Service, has reduced flood damages by controlling several small floods. Because only minor floods occurred during an extended period following construction of the Lake Darling Dam, the problem of flooding became a matter of little concern for interests in the vicinity of Minot and numerous residential and commercial developments were constructed in the Souris River floodplain. The 1969 spring flood (25-year flood) greatly exceeded the available flood storage capacity of Lake Darling and caused damages, including flood-fight costs, of about $10,900,000 at Minot and about $1,600,000 in the remainder of the Souris Valley. Without emergency measures, damages would have reached $19,300,000 in Minot. The flood inundated 3,000 homes and required evacuation of nearly 11,800 persons, approximately one-third of the population of Minot, causing much human hardship. Again in 1970, heavy mid-April snowstorms created a serious flood threat. Through advance flood forecasts and timely actions generally in accordance with a flood emergency plan, a potential flood disaster in the Souris River Valley was averted. Nevertheless, urban and rural damages amounted to $2,700,000 including all flood fight costs. Damages without a flood fight would have amounted to $4,600,000. Another significant flood occurred in April 1976 (75-year flood) causing actual urban and agricultural damages of $15,300,000 including $6,500,000 for flood fight and cleanup costs at urban locations. The most recent flood occurred in May 1979. Damages for the main stem totaled $1,600,000. Damages prevented by emergency work amounted to $2,000,000. The Minot Channel Project prevented damages of $40,900,000. Estimated damages if equivalent floods occurred at the present time without the project in operation and without a flood fight would amount to about $72,537,000 for the 1969 flood, $16,156,000 for the 1970 flood, $71,236,000 for the 1975 flood, $137,701,000 for the 1976 flood, and $72,537,000 for the 1979 flood. Construction of the project will substantially reduce these damages. The average annual damages without the project are $8,396,000 compared to $2,913,600 with the project. The project includes work in Renville, Ward, McHenry, and Bottineau Counties in North Dakota. Renville and McHenry Counties have been designated as redevelopment areas under Title IV of the Public Works and Economic Development Act of 1965 (Public Law 89-136). The average annual benefits are as follows:

| Benefits | Amount (1 October 1985) |
|---|---|
| Flood Control | $5,240,600 |
| Future Capitol Cost-Savings | 232,000 |
| | $5,472,600 |

FISCAL YEAR 1987: The requested amount will be applied as follows:

| | |
|---|---|
| Construction, Velva Unit | $ 445,000 |
| Lands and Damages, Lake Darling Unit | 25,000 |
| Construction, Lake Darling Unit (Burlington to Minot Improvements) | 500,000 |
| Engineering and Design | 845,000 |
| Supervision and Administration | 185,000 |
| Total | $2,000,000 |

The funds requested for FY 1987 are for completion of the Velva Unit and also for initiation of construction of the Lake Darling Unit. A separable stage of construction is scheduled for the Burlington to Minot Improvements and for the Lake Darling Dam features. Continue work on the following Feature Design Memorandums (FDM's): Burlington-Minot Improvements, Reservoir Relocation, Refuge Structures, Rural Downstream Improvements, Sawyer Improvements, and Gassman Coulee. Continue work on the following Plans and Specifications: Lake Darling Dam, Reservoir Levees, Reservoir Relocations, Burlington-Minot Improvements.

NON-FEDERAL COST: The amount of $4,880,000 will be used to pay for lands, damages, and relocations necessary for the flood control improvement features downstream of the reservoir and for betterment to road and railroad crossings in the reservoir. Also, local interests are required to maintain and operate the downstream local protection measures at an estimated annual cost of $58,100. Local interests are also required to maintain and manage the floodplain upon completion.

STATUS OF LOCAL COOPERATION: By resolution dated 19 June 1969, the Ward County Water Management Board agreed to sponsor a channel improvement project at Minot and meet the local cooperation requirements for an overall flood protection plan. When the current project was authorized, there was a recognized need for a joint board representing the counties affected by the project to serve as local sponsor. On 18 August 1982, the Ward County Water Resources District provided a letter of intent to accept the responsibilities as the lead agency of a joint organization. The letter indicated a willingness to work in good faith with the Administration of the United States in the planning and funding process for the project. On 6 June 1983, the representatives of the water resource districts from Ward, Renville, McHenry, and Bottineau Counties and the Oak Creek drainage area agreed to become members of a Souris River Joint Board for flood control, which would serve as local sponsor for the project. The general letter of intent to serve as a local sponsor was signed by their president on 14 June 1983. A local cooperation agreement for construction at Velva was signed on 20 November 1984 and another local cooperation agreement will be prepared for the remainder of the Lake Darling project after a decision has been made on cost sharing for the entire project.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $59,200,000 is a decrease of $400,000 from the latest estimate ($59,600,000) presented to Congress. This change includes increases of $3,000,000 for adjustments in the estimated inflation allowance through the construction period, $1,505,000 for Engineering and Design costs identified due to the complex nature and the separable features of the project, $275,000 for Supervision and Administration costs identified due to the higher Engineering and Design costs, $270,000 for cost estimating adjustments, and $50,000 based on receipt of bids and contract award. These increases were more than offset by a decrease of $6,400,000 due to the identification of road and railroad raises in the reservoir as a non-Federal responsibility.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The Environmental Impact Statement reporting requirements can be accomplished using the tiering principle. Initially, a generic (programmatic) Environmental Impact Statement, showing basin-wide impacts of the project and including site specific documentation for the Velva levee feature, was prepared. A subsequent site specific Environmental Impact Statement for other project features will be prepared prior to their construction. The initial draft Environmental Impact Statement was submitted to the Environmental Protection Agency on 29 October 1982. The final generic/Velva Environmental Impact Statement was filed on 24 February 1984, and the final Environmental Impact Statement for other project features is scheduled for submission in the second quarter of FY 1986.

The provisions of Section 404 of the Clean Water Act for the Velva Feature have been met by a Section 404(b)(1) Evaluation completed on 18 November 1983, a Public Notice issued on 3 April 1984, a Certification issued by the State of North Dakota on 2 May 1984, and the District Commander's signature on the General Design Memorandum on 30 June 1983.

The provisions of Section 404 for the remainder of the project have been met by the District Commander's signature on the supplement to the General Design Memorandum on 20 August 1985, a Public Notice issued on 30 August 1985, a Section 404(b)(1) Evaluation completed on 16 December 1985, and a Certification from the State of North Dakota issued on 21 November 1985.

OTHER INFORMATION: Initial construction funds were made available in FY 1982.

The Lake Darling project is the second phase of the total flood control plan for the Souris Valley in North Dakota. The channel modification in Minot, which was authorized in the summer of 1970 and completed in 1979, was the first phase of construction. The Burlington Dam project was previously authorized as the second phase of the flood control plan in December 1970. However, due to the controversial nature of the Burlington Dam project, a scaled down project was pursued by local interests. The resulting action was the authorization in the 1982 Energy and Water Development Appropriations Act, Public Law 97-88, to raise the dam at Lake Darling by approximately 4 feet and to implement upstream and downstream flood control measures. Features of this project were also included in the Burlington Dam plan; however, the Burlington Dam and Des Lacs River Diversion improvements have now been placed in a deferred status (the Senate Committee directed that the Corps take no further action to construct Burlington Dam until expressly directed to do so by the Committee).

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

**Division:** North Central
**District:** St. Paul

**Project:** Lake Darling, Souris River, North Dakota

| Item | Estimates Presented to Congress ($1,000) | | | | |
|---|---|---|---|---|---|
| | Original Baseline (1) | Cumulative Changes (2) | Last (3) | Incremental Change (4) | Current (5) |
| Federal Cost<br>(Price Level) | $57,700<br>(Oct 1981) | | $59,600 1/ | | $59,200 1/2/ |
| Reason for Change | | (+1,900)1/ | | (-400)2/ | |
| a. Price Escalation | | +10,023 | | +3,900 | |
| b. Design Changes | | +512 | | 0 | |
| c. Additional Function Added Under General Authorization | | 0 | | 0 | |
| d. Authorized Modification | | 0 | | 0 | |
| e. Post-Contract Award and Other Estimating Adjustments | | -7,246 | | -4,300 3/ | |
| f. Schedule Changes | | 0 | | 0 | |
| g. Sundry | | 0 | | 0 | |
| h. Real Estate | | -1,389 | | 0 | |

1/ Includes an allowance for estimated inflation through the construction period.

2/ Includes an increase of $3,900 for adjustments in the estimated inflation allowance through the construction period.

3/ Includes increases of $1,505 for Engineering and Design costs identified due to the complex nature and the separable features of the project, $275 for Supervision and Administration costs identified due to the higher Engineering and Design costs, $270 for cost estimating adjustments, and $50 based on receipt of bids and contract award. These increases were more than offset by a decrease of $6,400 due to the identification of road and railroad raises in the reservoir as a non-Federal responsibility.

REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: RESERVOIRS (FLOOD CONTROL)

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM (a) | PROJECT COST ESTIMATE (b) | TOTAL TO 30 SEP 19 85 (c) | CURRENT FY 19 86 (d) | BUDGET FY 19 87 (e) | BALANCE TO COMPLETE AFTER FY 19 87 (f) |
|---|---|---|---|---|---|---|
| 1 | VELVA | | | | | |
| 2 | CHANNELS | 2,056,000 | 270,000 | 1,447,000 | 339,000 | |
| 3 | LEVEES | 2,006,000 | 80,000 | 1,820,000 | 106,000 | |
| 4 | PUMPING PLANTS | 308,000 | | 308,000 | | |
| 5 | ENGINEERING AND DESIGN | 470,000 | 450,000 | 15,000 | 5,000 | |
| 6 | SUPERVISION AND ADMINISTRATION | 310,000 | 130,000 | 155,000 | 25,000 | |
| 7 | SUBTOTAL, VELVA | 5,150,000 | 930,000 | 3,745,000 | 475,000 | |
| 8 | | | | | | |
| 9 | LAKE DARLING | | | | | |
| 10 | LANDS AND DAMAGES | 420,000 | 70,000 | 30,000 | 25,000 | 295,000 |
| 11 | RELOCATIONS | 9,659,000 | | | | 9,659,000 |
| 12 | FISH AND WILDLIFE | 28,273,000 | | | | 28,273,000 |
| 13 | CHANNELS | 846,000 | | | 43,000 | 803,000 |
| 14 | LEVEES | 4,160,000 | | | 312,000 | 3,848,000 |
| 15 | PUMPING PLANTS | 1,060,000 | | | 145,000 | 915,000 |
| 16 | BUILDINGS, GROUNDS AND UTILITIES | 13,000 | | | | 13,000 |
| 17 | PERMANENT OPERATING EQUIPMENT | 289,000 | | | | 289,000 |
| 18 | ENGINEERING AND DESIGN | 5,650,000 | 3,046,000 | 914,000 | 840,000 | 850,000 |
| 19 | SUPERVISION AND ADMINISTRATION | 3,680,000 | 546,000 | 169,000 | 160,000 | 2,805,000 |
| 20 | SUBTOTAL, LAKE DARLING | 54,050,000 | 3,662,000 | 1,113,000 | 1,525,000 | 47,750,000 |
| 21 | | | | | | |
| 22 | TOTAL APPLIED COST (Federal Funds Only) | 59,200,000 | 4,592,000 | 4,858,000 | 2,000,000 | 47,750,000 |
| 23 | Undistributed Cost (None) | | | | | |
| 24 | TOTAL PROJECT COST (Federal Funds Only) | 59,200,000 | 4,592,000 | 4,858,000 | 2,000,000 | 47,750,000 |
| 25 | Pending Adjustments (None) | | | | | |
| 26 | TOTAL COST (Federal Funds Only) | 59,200,000 | 4,592,000 | 4,858,000 | 2,000,000 | 47,750,000 |
| 27 | Undelivered Orders | | 1,411,000 | -1,411,000 | | |
| 28 | TOTAL OBLIGATIONS | | 6,003,000 | 3,447,000 | 2,000,000 | 47,750,000 |
| 29 | | | | | | |
| 30 | | | | | | |
| 31 | | | | | | |
| 32 | | | | | | |
| 33 | | | | | | |

EFFECTIVE DATE 1 JAN 1986

DIVISION NORTH CENTRAL

DISTRICT ST PAUL

REGION SOURIS-RED-RAINY

BASIN SOURIS-RED-RAINY

PROJECT LAKE DARLING, SOURIS RIVER NORTH DAKOTA

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE.

REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: RESERVOIRS (FLOOD CONTROL)

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM<br>(a) | PROJECT COST ESTIMATE<br>(b) | TOTAL TO 30 SEP 1985<br>(c) | CURRENT FY 1986<br>(d) | BUDGET FY 1987<br>(e) | BALANCE TO COMPLETE AFTER FY 19 87<br>(f) |
|---|---|---|---|---|---|---|
| 1 | METHOD OF FINANCING | | | | | |
| 2 | ALLOCATIONS | | 6,050,000 | 3,400,000 | | |
| 3 | UNOBLIGATED CARRY-OVER FROM PRIOR YEAR | | | 47,000 | | |
| 4 | TOTAL FUNDS AVAILABLE FOR OBLIGATION | | | 3,447,000 | | |
| 5 | APPROPRIATIONS REQUIRED | | | | 2,000,000 | 47,750,000 |
| 6 | | | | | | |
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|---|---|---|---|
| EFFECTIVE DATE<br>1 JAN 1986 | DIVISION NORTH CENTRAL<br>DISTRICT ST. PAUL | REGION SOURIS-RED-RAINY<br>BASIN SOURIS-RED-RAINY | PROJECT LAKE DARLING, SOURIS RIVER, NORTH DAKOTA |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE.

APPROPRIATION TITLE: Construction, General - Major Rehabilitation - Locks and Dams (Navigation)

PROJECT: Illinois Waterway, Brandon Road Lock and Dam, Illinois (Rehabilitation of Lock and Dam) (Continuing)

LOCATION AND DESCRIPTION: Located in the city of Joliet, Illinois, at mile 286 of the Illinois Waterway on the Des Plaines River. Rehabilitation required consists of resurfacing the lock walls and rehabilitation of lock gates, miter gate machinery, the electrical system, the dam gates, and the Joliet Channel Walls.

AUTHORIZATION: River and Harbor Act of 1930

BENEFIT-COST RATIO: The remaining benefit-remaining cost ratio is not applicable because monetary benefits have not been quantified.

| SUMMARIZED FINANCIAL DATA | | Accum. % of Est. Fed. Cost |
|---|---|---|
| Estimated Federal Cost | $24,400,000 | |
| Estimated Non-Federal Cost | 0 | |
| Total Estimated Project Cost | $24,400,000 | |
| Allocations to 30 September 1985 | 12,230,000 | |
| Conference Allowance for FY 1986 | 4,800,000 | |
| Allocation for FY 1986 | 5,150,000 1/ | |
| Allocations to Date | 17,380,000 | 71 |
| Allocation Requested for FY 1987 | 5,470,000 | 94 |
| Scheduled Balance To Complete after FY 1987 | 1,550,000 | |
| Unscheduled Balance to Complete after FY 1987 | 0 | |

| STATUS: (1 January 1986) | PERCENT COMPLETE | COMPLETION SCHEDULE |
|---|---|---|
| Dam | 6 | Feb 1987 |
| Lock | 96 | Nov 1986 |
| Joliet Channel Walls | 2 | Dec 1987 |
| Entire Project | 48 | Dec 1987 |

1/ Reflects $350,000 transfer to the project.

JUSTIFICATION: The miter gates, gate machinery, electrical system, concrete surfaces of the lock walls and Joliet Channel Walls are in an advanced state of deterioration. Also, the lower guide walls do not meet current stability criteria requirements for overturning. Rehabilitation is needed to insure safety and uninterrupted year-round operation of this project. Delaying the work will risk interruption of navigation due to frequent shutdowns for major repairs and will result in increased total maintenance cost to the Government.

Division: North Central District: Rock Island Region: Upper Mississippi
Illinois Waterway, Brandon Road Lock and Dam, Illinois

JUSTIFICATION: (Cont'd)

Traffic through the lock for the past five years is as follows:

| Year | Commercial Tonnage | Number of Lockages Commercial Vessels |
|---|---|---|
| 1980 | 20,674,000 | 5,425 |
| 1981 | 20,054,000 | 5,302 |
| 1982 | 17,860,000 | 4,532 |
| 1983 | 17,983,000 | 4,211 |
| 1984 | 14,506,000 | 3,166 |

FISCAL YEAR 1987: The requested amount will be applied as follows:

| | | |
|---|---|---|
| Continue: | Stage IVB, Rehabilitation of Joliet Channel Walls | $1,420,000 |
| Complete: | Stage II, Replacement of Electrical System and Miter Gate Machinery | 70,000 |
| | Stage III, Dam Resurfacing and Gate Rehabilitation | 1,700,000 |
| | Stage IVA, Rehabilitation of Joliet Channel Walls | 1,840,000 |
| Engineering and Design | | 80,000 |
| Supervision and Administration | | 360,000 |
| | Total | $5,470,000 |

Funds requested are based on an economical rate of construction with project completion scheduled for November 1987.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $24,400,000 is an increase of $2,100,000 over the latest estimate ($22,300,000) presented to Congress. This change includes increases of $4,110,000 based on more detailed planning of construction and $250,000 for Real Estate costs due to the need to acquire temporary work area easements and perpetual channel wall maintenance easements. These increases were partially offset by decreases of $230,000 for adjustments in the estimated inflation allowance through the construction period and $2,030,000 due to favorable bids received.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT:

a. Status of Environmental Impact Statement: The operation and maintenance of the Illinois Waterway for commercial navigation has been addressed in the Environmental Impact Statement entitled "Operation and Maintenance of a Nine-Foot Channel in the Illinois Waterway from the Junction of the Cal-Sag Channel and the Chicago Sanitary and Ship Canal to the LaGrange Lock and Dam," which was filed with the Council on Environmental Quality on 1 December 1975. With regard to the proposed Lock and Dam rehabilitation work, a Finding of No Significant Impact (FONSI) was signed by the District Commander on 31 March 1983. For the Joliet Channel Walls rehabilitation, a FONSI was signed by the District Commander on 6 February 1985.

b. Compliance with Clean Water Act: The provisions of Section 404 of the Clean Water Act do not apply because the project improvements do not involve the placement of fill materials or discharge of dredge material into the waters of the United States.

OTHER INFORMATION: Funds to initiate construction were appropriated in FY 1984.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: North Central
District: Rock Island

Project: Illinois Waterway, Brandon Road Lock and Dam, Illinois

| | Estimates Presented to Congress ($1,000) | | | | |
|---|---|---|---|---|---|
| Item | Original Baseline (1) | Cumulative Changes (2) | Last (3) | Incremental Change (4) | Current (5) |
| Federal Cost<br>(Price Level) | 11,200<br>(Oct 1982) | | 22,300 1/ | | 24,400 1/ 2/ |
| Reason for Change | | (11,100) 1/ | | (2,100) 2/ | |
| a. Price Escalation | | 1,165 | | -230 | |
| b. Design Changes | | 0 | | 0 | |
| c. Additional Function Added Under General Authorization | | 0 | | 0 | |
| d. Authorized Modification | | 0 | | 0 | |
| e. Post-Contract Award and Other Estimating Adjustments | | 9,935 | | 2,080 3/ | |
| f. Schedule Changes | | 0 | | 0 | |
| g. Sundry | | 0 | | 0 | |
| h. Real Estate | | 0 | | 250 | |

1/ Includes an allowance for estimated inflation through the construction period.

2/ Includes a decrease of $230 for adjustments in the estimated inflation allowance through the construction period.

3/ Includes increases of $4,110 based on more detailed planning of construction, partially offset by decreases of $2,030 due to favorable bids received.

REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: NAVIGATION (LOCKS AND DAMS)
MAJOR REHABILITATION

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM (a) | PROJECT COST ESTIMATE (b) | TOTAL TO 30 SEP 1985 (c) | CURRENT FY 1986 (d) | BUDGET FY 1987 (e) | BALANCE TO COMPLETE AFTER FY 1987 (f) |
|---|---|---|---|---|---|---|
| 1 | DAMS | $ 4,940,000 | $ 0 | $3,240,000 | $1,700,000 | |
| 2 | LOCKS | 16,800,000 | 9,484,900 | 2,485,100 | 3,330,000 | $1,500,000 |
| 3 | ENGINEERING AND DESIGN | 1,210,000 | 908,400 | 211,600 | 80,000 | 10,000 |
| 4 | SUPERVISION AND ADMINISTRATION | 1,450,000 | 634,200 | 415,800 | 360,000 | 40,000 |
| 5 | | | | | | |
| 6 | | | | | | |
| 7 | TOTAL APPLIED COSTS (Federal Funds Only) | 24,400,000 | 11,027,500 | 6,352,500 | 5,470,000 | 1,550,000 |
| 8 | Undistributed Costs (None) | | | | | |
| 9 | TOTAL PROJECT COSTS (Federal Funds Only) | 24,400,000 | 11,027,500 | 6,352,500 | 5,470,000 | 1,550,000 |
| 10 | Pending Adjustments (None) | | | | | |
| 11 | TOTAL COSTS (Federal Funds Only) | 24,400,000 | 11,027,500 | 6,352,500 | 5,470,000 | 1,550,000 |
| 12 | Undelivered Orders | | 1,194,800 | -1,194,800 | | |
| 13 | TOTAL OBLIGATIONS | | 12,222,300 | 5,157,700 | 5,470,000 | 1,550,000 |
| 14 | | | | | | |
| 15 | | | | | | |
| 16 | METHOD OF FINANCING | | | | | |
| 17 | FEDERAL FUNDS | | | | | |
| 18 | Allocations | | 12,230,000 | 5,150,000 1/ | | |
| 19 | Unobligated Carryover from Prior Year | | | 7,700 | | |
| 20 | Total Funds Available for Obligation | | | 5,157,700 | | |
| 21 | Appropriations Required | | | | 5,470,000 | 1,550,000 |
| 22 | | | | | | |
| 23 | NON-FEDERAL COSTS | | | | | |
| 24 | Cash | 0 | | | | |
| 25 | Other | 0 | | | | |
| 26 | Lands and Damages | (0) | | | | |
| 27 | Relocations | (0) | | | | |
| 28 | Other | (0) | | | | |
| 29 | TOTAL NON-FEDERAL COSTS | 0 | | | | |
| 30 | | | | | | |
| 31 | 1/ Reflects $350,000 transfer to the project. | | | | | |
| 32 | | | | | | |
| 33 | | | | | | |

EFFECTIVE DATE 1 JAN 86

DIVISION NORTH CENTRAL

DISTRICT ROCK ISLAND

REGION UPPER MISSISSIPPI

BASIN SALT-SNY-ILLINOIS

PROJECT ILLINOIS WATERWAY, BRANDON ROAD LOCK & DAM, ILLINOIS

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE.

## NORTH CENTRAL DIVISION
## JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General FY 1987

1. Navigation

a. Channels and Harbors

The program request of $77,744,000 provides for essential maintenance work on 56 channel and harbor projects named in the list which follows. The work to be accomplished under this activity consists of maintaining the harbors and waterways by means of dredging, snagging, and repairing harbor jetties and breakwaters, all as authorized in the laws adopting river and harbor projects.

OBLIGATIONS

| Project | Actual FY 1985 ($) | Estimated FY 1986 ($) | Estimated FY 1987 ($) | Explanation of Major Changes |
|---|---|---|---|---|
| Illinois | | | | |
| Chicago Harbor | 705,600 | 989,000 | 3,505,000 | Periodic dredging FY 86; repair lock electrical system FY 87 |
| Chicago River | 382,400 | 1,084,000 | 3,113,000 | Dredging FY 86 & 87 |
| Waukegan Harbor | 405,100 | 711,000 | 1,195,000 | Variation in dredging requirements FY85 & 86; breakwater repairs FY87 |
| Illinois & Indiana | | | | |
| Calumet Harbor & River | 2,678,400 | 651,000 | 467,000 | Periodic dredging FY 85; breakwater repairs FY 86 |
| Indiana | | | | |
| Burns Waterway Harbor | 79,200 | 400,000 | 1,108,000 | Breakwater repair FY 86 & 87 |
| Burns Waterway Small Boat Harbor | 0 | 25,000 | 55,000 | Monitor effects of shore damage mitigation FY 86 & 87 |
| Indiana Harbor | 1,363,800 | 1,262,000 | 10,070,000 | Initiate construction of confined disposal facility FY 87 |
| Michigan | | | | |
| Arcadia Harbor | 263,400 | 148,000 | 171,000 | Variation in dredging & breakwater repair requirements |
| Bolles Harbor | 15,200 | 393,000 | 55,000 | Disposal area repair FY 86 & 87; periodic dredging FY 87 |
| Caseville Harbor | 0 | 0 | 167,000 | Periodic dredging FY 87 |

## NORTH CENTRAL DIVISION
## JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General FY 1987

1. Navigation (Cont'd)

a. Channels and Harbors (Cont'd)

OBLIGATIONS

| Project | Actual FY 1985 ($) | Estimated FY 1986 ($) | Estimated FY 1987 ($) | Explanation of Major Changes |
|---|---|---|---|---|
| Michigan (Cont'd) | | | | |
| Channels in Lake St. Clair | 290,800 | 382,000 | 157,000 | Navigation season extension environmental impact statement FY 85 & 86; disposal area maintenance FY 86. |
| Charlevoix Harbor | 63,100 | 182,000 | 622,000 | Breakwater repair FY 86 & 87 |
| Detroit River | 9,176,900 | 7,277,000 | 7,397,000 | Variation in dredging requirements |
| Grand Haven Harbor & Grand River | 1,645,900 | 810,000 | 684,000 | Variation in dredging & breakwater repair requirements |
| Harbor Beach Harbor | 523,600 | 422,000 | 179,000 | Dredging FY 85 & 86; breakwater repair FY 87 |
| Harrisville Harbor | 13,100 | 90,000 | 261,000 | Monitor shore erosion damages FY86; periodic dredging FY 87 |
| Holland Harbor | 1,117,700 | 1,075,000 | 811,000 | Variation in dredging requirements; shore erosion mitigation FY85 |
| Inland Route | 86,200 | 101,000 | 21,000 | Lock operations FY 85 & 86; lock in caretaker status FY 87 |
| Keweenaw Waterway | 398,800 | 2,215,000 | 897,000 | Major revetment repair FY 85, 86 & 87 |
| Leland Harbor | 62,100 | 139,000 | 90,000 | Variation in dredging requirements |
| Lexington Harbor | 246,700 | 216,000 | 347,000 | Variation in shore erosion mitigation; periodic dredging FY 87 |
| Little Lake Harbor | 227,500 | 237,000 | 234,000 | |
| Ludington Harbor | 1,084,700 | 576,000 | 1,360,000 | Shore erosion mitigation FY 85 & 87; breakwater repair FY 87 |
| Monroe Harbor | 1,794,200 | 2,349,000 | 1,878,000 | Variation in dredging requirements |
| Muskegon Harbor | 125,800 | 309,000 | 463,000 | Variation in dredging & breakwater repair requirements; shore erosion mitigation FY 87 |

## NORTH CENTRAL DIVISION
## JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General FY 1987
1. Navigation (Cont'd)

a. Channels and Harbors (Cont'd)

| Project | OBLIGATIONS Actual FY 1985 ($) | Estimated FY 1986 ($) | Estimated FY 1987 ($) | Explanation of Major Changes |
|---|---|---|---|---|
| Michigan (Cont'd) | | | | |
| Ontonagon Harbor | 535,000 | 529,000 | 253,000 | Variation in dredging & breakwater repair requirements |
| Pentwater Harbor | 169,700 | 278,000 | 212,000 | Variation in dredging and breakwater repair requirements |
| Port Sanilac Harbor | 245,700 | 0 | 155,000 | Periodic shore erosion mitigation |
| Rouge River | 764,300 | 2,356,000 | 1,115,000 | Variation in dredging requirements; disposal area repair FY 86 & 87 |
| Saginaw River | 2,769,000 | 2,026,000 | 4,211,000 | Variation in dredging requirements |
| St. Clair River | 1,484,400 | 1,132,000 | 847,000 | Variation in dredging & obstruction removal requirements |
| St. Joseph Harbor | 575,900 | 1,487,000 | 899,000 | Variation in dredging requirements & shore erosion mitigation efforts; breakwater repair FY 87 |
| White Lake Harbor | 436,600 | 113,000 | 225,000 | Shore erosion mitigation FY 85 & 87; increased breakwater repair requirements FY 85 |
| Menominee Harbor & River | 124,900 | 163,000 | 110,000 | Breakwater repair FY 85; engineering & design of disposal facility FY 85-87 |
| Minnesota | | | | |
| Minnesota River | 56,600 | 506,000 | 444,000 | Variation in dredging requirements |
| Winona Commercial Harbor | 0 | 0 | 20,000 | Periodic dredging FY 87 |
| Minnesota & Wisconsin | | | | |
| Duluth-Superior Harbor | 5,729,900 | 6,548,000 | 5,471,000 | Variation in dredging requirements; FY 85, 86 & 87 include major rehabilitation at $2,410,000 $4,200,000 & $3,100,000 respectively: see justification following this table |

## NORTH CENTRAL DIVISION
## JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General FY 1987

1. Navigation (Cont'd)

   a. Channels and Harbors (Cont'd)

OBLIGATIONS

| Project | Actual FY 1985 ($) | Estimated FY 1986 ($) | Estimated FY 1987 ($) | Explanation of Major Changes |
|---|---|---|---|---|
| Minnesota & Wisconsin (Cont'd) | | | | |
| St. Croix River | 161,500 | 157,000 | 154,000 | |
| New York | | | | |
| Buffalo Harbor | 2,232,600 | 1,207,000 | 1,638,000 | Variation in dredging & breakwater repair requirements |
| Oswego Harbor | 16,100 | 0 | 817,000 | Condition survey & sediment testing FY 85; periodic dredging FY 87 |
| Rochester Harbor | 96,300 | 1,575,000 | 827,000 | Variation in dredging and breakwater repair requirements |
| Ohio | | | | |
| Ashtabula Harbor | 729,000 | 435,000 | 562,000 | Breakwater repair FY 85 & 86; periodic dredging FY 87 |
| Cleveland Harbor | 5,860,900 | 6,045,000 | 5,359,000 | FY 85 & 86 include major rehabilitation at $2,900,000 & $2,600,000 respectively |
| Conneaut Harbor | 53,800 | 716,000 | 777,000 | Dredging & breakwater repair FY 86 & 87 |
| Fairport Harbor | 765,100 | 513,000 | 872,000 | Periodic dredging FY 85 & 87 |
| Huron Harbor | 470,600 | 1,080,000 | 862,000 | Variation in dredging requirements; breakwater repair FY 86 |
| Lorain Harbor | 913,800 | 1,057,000 | 1,377,000 | Variation in dredging and breakwater repair requirements |
| Sandusky Harbor | 911,000 | 583,000 | 1,279,000 | Variation in dredging requirements; breakwater repair FY 87 |
| Toledo Harbor | 4,002,800 | 4,060,000 | 4,599,000 | Variation in dredging requirements |

## NORTH CENTRAL DIVISION
## JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General FY 1987

1. Navigation (Cont'd)
   a. Channels and Harbors (Cont'd)

OBLIGATIONS

| Project | Actual FY 1985 ($) | Estimated FY 1986 ($) | Estimated FY 1987 ($) | Explanation of Major Changes |
|---|---|---|---|---|
| **Wisconsin** | | | | |
| Green Bay Harbor | 1,029,100 | 1,800,000 | 757,000 | Variation in dredging requirements |
| Kewaunee Harbor | 194,400 | 609,000 | 848,000 | Periodic dredging FY 86; breakwater repair FY86 & 87 |
| Manitowoc Harbor | 124,000 | 504,000 | 1,505,000 | Disposal area repair FY86; periodic dredging & breakwater repair FY 86 & 87 |
| Milwaukee Harbor | 2,102,800 | 4,764,000 | 4,786,000 | Periodic dredging FY 86; FY 85, 86 & 87 include major rehabilitation at $2,010,000, $3,600,000 & $4,500,000 respectively: see justification following this table |
| Racine Harbor | 43,900 | 78,000 | 40,000 | Variation in shore erosion mitigation |
| Sheboygan Harbor | 149,700 | 503,000 | 307,000 | Variation in dredging requirements |
| Sturgeon Bay & Lake Michigan Ship Canal | 395,400 | 619,000 | 1,109,000 | Variation in dredging & breakwater repair requirements |
| Other Projects Maintained Periodically | 5,594,700 | 6,393,000 | | |
| Sub-Total Regular O&M for Channels & Harbors | 61,489,700 | 69,879,000 | 77,744,000 | |

## NORTH CENTRAL DIVISION
## JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General FY 1987

1. Navigation (Cont'd)
   a. Channels and Harbors (Cont'd)

OBLIGATIONS

| Project | Actual FY 1985 ($) | Estimated FY 1986 ($) | Estimated FY 1987 ($) | Explanation of Major Changes |
|---|---|---|---|---|
| **Diked Disposal** | | | | |

The program request of $19,770,000 provides for initiating construction of two disposal areas, continuing construction of one disposal area and completing one area.

| Project | Actual FY 1985 ($) | Estimated FY 1986 ($) | Estimated FY 1987 ($) | Explanation of Major Changes |
|---|---|---|---|---|
| **Michigan** | | | | |
| Clinton River | 38,700 | 100,000 | 800,000 | Initiate construction FY 87 |
| Keweenaw Waterway | 70,100 | 630,000 | 3,100,000 | Complete construction FY 87 |
| Saginaw River | 259,600 | 400,000 | 6,840,000 | Initiate construction FY 87 |
| **Wisconsin** | | | | |
| Green Bay Harbor | 389,500 | 760,000 | 9,030,000 | Continue construction FY 87 |
| Other Diked Disposal Projects | 1,565,700 | 2,000 | | |
| Sub-Total Diked Disposal | 2,323,600 | 1,892,000 | 19,770,000 | |
| Total Channels & Harbors | 63,813,300 | 71,771,000 | 97,514,000 | |

## NORTH CENTRAL DIVISION
## JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General FY 1987

1. Navigation (Cont'd)

b. Locks and Dams

The program request of $90,682,000 provides for the operational requirements of two projects, portions of the Illinois Waterway and Mississippi River projects and caretaker status of the Fox River, Wisconsin, project. Requirements include: operation of project facilities; labor; supplies; material and parts required for day-to-day functioning of projects; and periodic maintenance, repairs and replacements. The requested amount also includes application of special recreation use fees for recreation areas.

OBLIGATIONS

| Project | Actual FY 1985 ($) | Estimated FY 1986 ($) | Estimated FY 1987 ($) | Explanation of Major Changes |
|---|---|---|---|---|
| Illinois | | | | |
| Illinois Waterway (NCD) | 10,358,900 | 17,951,000 | 29,428,000 | Repair Lockport dike FY 87; FY 85, 86 & 87 include major rehabilitation at $408,000, $7,732,000 & $16,700,000 respectively: see justification following this table |
| Mississippi Riv. between Missouri Riv. & Minneapolis (NCD) | 42,790,700 | 47,838,000 | 56,243,000 | Repair mechanical & electrical systems at Locks & Dams 2,4,5 & 10 FY 85, 86 & 87; FY 86 & 87 include major rehabilitation at $1,480,000 and $13,200,000 respectively;see justification following this table. |
| Minnesota | | | | |
| Reservoirs at Headwaters of Mississippi River | 1,735,300 | 2,730,000 | 1,824,000 | Dam structure repairs FY 86 |

## NORTH CENTRAL DIVISION
## JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General FY 1987

1. Navigation (Cont'd)

b. Locks and Dams (Cont'd)

OBLIGATIONS

| Project | Actual FY 1985 ($) | Estimated FY 1986 ($) | Estimated FY 1987 ($) | Explanation of Major Changes |
|---|---|---|---|---|
| New York | | | | |
| Black Rock Channel & Tonawanda Harbor | 2,452,000 | 3,245,000 | 2,257,000 | Bird Island Pier repair FY 85 & 86; stabilize west lock wall FY 86 & 87 |
| Wisconsin | | | | |
| Fox River | 1,041,100 | 1,008,000 | 930,000 | |
| Other Projects Maintained Periodically | 330,900 | 82,000 | | |
| Total-Locks and Dams | 58,708,900 | 72,854,000 | 90,682,000 | |
| TOTAL - NAVIGATION | 122,522,200 | 144,625,000 | 188,196,000 | |

## NORTH CENTRAL DIVISION
## JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General FY 1987

2. Flood Control

a. Reservoirs

The program request of $13,443,000 for the operation and maintenance of 13 flood control reservoir projects within the division provides the amount for operation requirements. Annual requirements are for operation of project facilities; labor, supplies, materials and parts required for the day-to-day functioning of projects. The requested amount also includes application of special recreation use fees for recreation areas.

OBLIGATIONS

| Project | Actual FY 1985 ($) | Estimated FY 1986 ($) | Estimated FY 1987 ($) | Explanation of Major Changes |
|---|---|---|---|---|
| **Illinois** | | | | |
| Farm Creek Reservoirs | 99,700 | 123,000 | 119,000 | Increased dam maintenance FY 86 & 87 |
| **Iowa** | | | | |
| Coralville Lake | 2,429,000 | 2,337,000 | 3,110,000 | Dam structure repairs FY 87 |
| Red Rock Dam-Lake Red Rock | 3,039,700 | 2,961,000 | 3,317,000 | Dam structure repairs FY 87 |
| Saylorville Lake | 2,657,400 | 3,126,000 | 3,585,000 | Road repairs FY86; repair spillway & sewage lagoon FY 87 |
| **Minnesota** | | | | |
| Lac qui Parle Lake | 1,053,100 | 705,000 | 483,000 | Repair Chippewa Diversion Channel FY 85 & 86; new dam gate operating equipment FY 85 |
| Orwell Lake | 471,000 | 400,000 | 209,000 | Dam safety assurance engineering & design, paint dam gate, periodic inspection and water quality monitoring FY 85; commercial activities evaluation and road paving FY 86 |
| Red Lake River | 119,100 | 136,000 | 61,000 | Dam failure planning FY 85 & 86; commercial activities evaluation FY 86 |

## NORTH CENTRAL DIVISION
## JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General FY 1987
2. Flood Control (Cont'd)
    a. Reservoirs (Cont'd)

OBLIGATIONS

| Project | Actual FY 1985 ($) | Estimated FY 1986 ($) | Estimated FY 1987 ($) | Explanation of Major Changes |
|---|---|---|---|---|
| Minnesota & South Dakota | | | | |
| Big Stone Lake & Whetstone River | 289,900 | 151,000 | 316,000 | Paint dam gate, instrumentation & dam failure planning FY 85; periodic inspection & water quality analysis FY 87 |
| Lake Traverse & Bois de Sioux River | 183,900 | 283,000 | 241,000 | Commercial activities evaluation & archeological resource investigation FY86; fish & wildlife management plan FY 87 |
| New York | | | | |
| Mt. Morris Lake | 891,400 | 1,034,000 | 956,000 | Increased water control management FY 86 |
| North Dakota | | | | |
| Homme Lake & Dam | 77,400 | 71,000 | 79,000 | Fish and wildlife management plan and instrumentation FY 87 |
| Lake Ashtabula & Baldhill Dam | 1,193,300 | 1,818,000 | 490,000 | Dam safety assurance analysis FY 85 & 86; water quality monitoring and instrumentation FY 85 |
| Wisconsin | | | | |
| Eau Galle River | 552,000 | 371,000 | 477,000 | Paint discharge conduit liner, repair road, periodic inspection & cultural resource investigation FY 85; repair eroded dam abutment, correct sanitary deficiencies & fish & wildlife management plan FY 87 |
| Total - Reservoirs | 13,056,900 | 13,516,000 | 13,443,000 | |

## NORTH CENTRAL DIVISION
## JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General FY 1987
2. Flood Control (Cont'd)
b. Channel Improvements, Inspections and Miscellaneous Maintenance

The program request of $702,000 provides for the annual maintenance requirements of one local flood protection project, minimum maintenance of one partially constructed flood control project and the inspection of completed flood control projects turned over to local interests to ensure adequate operation and maintenance.

OBLIGATIONS

| Project | Actual FY 1985 ($) | Estimated FY 1986 ($) | Estimated FY 1987 ($) | Explanation of Major Changes |
|---|---|---|---|---|
| **Michigan** | | | | |
| Sebewaing River | 7,300 | 24,000 | 25,000 | Variation in ice jam removal |
| **Wisconsin** | | | | |
| LaFarge Lake | 28,700 | 81,000 | 46,000 | Remove hazardous bridges FY 86; increased land management FY 87 |
| Inspection of Completed Works | 386,200 | 435,000 | 456,000 | Increased inspections FY 86 & 87; update operation & maintenance manuals FY 86 |
| Inspection of Non-Federal Levees | 54,100 | 95,000 | 175,000 | Increased inspections FY 86 & 87 |
| Other Projects Maintained Periodically | 222,100 | 150,000 | | |
| Total - Channel Improvements, Inspections and Miscellaneous Maintenance | 698,400 | 785,000 | 702,000 | |
| TOTAL FLOOD CONTROL | 13,755,300 | 14,301,000 | 14,145,000 | |

## NORTH CENTRAL DIVISION
## JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General FY 1987

### 3. Multiple-Purpose Power Projects

The program request of $10,070,000 for the operation and maintenance of the St. Marys Falls Canal, locks and power plant provides the amount for operational requirements. Annual requirements are for operation of project facilities; labor; supplies; materials and parts required for the day-to-day functioning of the project.

OBLIGATIONS

| Project | Actual FY 1985 ($) | Estimated FY 1986 ($) | Estimated FY 1987 ($) | Explanation of Major Changes |
|---|---|---|---|---|
| Michigan | | | | |
| St. Marys River | 9,062,000 | 10,474,000 | 10,070,000 | Increased lock maintenance FY 86 |
| TOTAL MULTIPLE-PURPOSE POWER PROJECTS | 9,062,000 | 10,474,000 | 10,070,000 | |

### 4. Protection of Navigation

The program request of $7,701,000 provides for accomplishing the work essential to the administration and enforcement of specific laws enacted for the protection of navigation, particularly Section 10, River and Harbor Act of 1899; Sections 402 and 404 of the Clean Water Act of 1977, involving the issuance and review of permits for discharges into navigable waters; and project condition surveys for projects where maintenance is not scheduled in the budget year.

| | | | | |
|---|---|---|---|---|
| General Regulatory Functions | 6,863,000 | 6,786,000 | 6,934,000 | |
| Project Condition Surveys | 743,200 | 814,000 | 767,000 | Increased surveys FY 86 |
| TOTAL PROTECTION OF NAVIGATION | 7,606,200 | 7,600,000 | 7,701,000 | |
| GRAND TOTAL - NORTH CENTRAL DIVISION | 152,945,700 | 177,000,000 | 220,112,000 | |

APPROPRIATION TITLE: Operations and Maintenance, General - Major Rehabilitation - Locks and Dams (Navigation)

PROJECT: Mississippi River, between Missouri River and Minneapolis, Minnesota - Lock and Dam No. 21, Illinois (Rehabilitation of Lock and Dam)

LOCATION AND DESCRIPTION: The project is located at Mississippi River Mile 325, about two miles downstream from Quincy, Illinois. The facility is a unit of the Inland Waterway Navigation System of the Upper Mississippi River Basin and is one of 29 such facilities in the system between Minneapolis, Minnesota, and St. Louis, Missouri. The structure was placed in operation in July 1938. Significant features of the proposed rehabilitation include resurfacing deteriorated concrete areas on the lock walls and dam piers; overhauling and painting the main and auxiliary lock gates; replacing the lock gate and lock valve operating machinery; replacing the electrical equipment; repairing side seal plates, replacing seals, and painting the dam roller gates; replacing seals, and painting the dam tainter gates; repairing the overflow section of the dam; repairing, replacing seals, and painting the roller and tainter gate emergency bulkheads; constructing a guardcell downstream of the intermediate lock wall; and placing additional rockfill and riprap for increased scour protection downstream of the dam structure.

AUTHORIZATION: River and Harbor Act of 1930.

BENEFIT-COST RATIO: The remaining benefit-remaining cost ratio is not applicable because monetary benefits have not been quantified.

| SUMMARIZED FINANCIAL DATA | | Accum. % of Est. Fed. Cost | STATUS: (1 January 1986) | PERCENT COMPLETE | COMPLETION SCHEDULE |
|---|---|---|---|---|---|
| Estimated Federal Cost | $14,200,000 | | Project Not Yet Started | | Sep 1990 |
| Estimated Non-Federal Cost | 0 | | | | |
| Total Estimated Project Cost | $14,200,000 | | | | |
| Allocations to 30 September 1985 | 0 | | | | |
| Conference Allowance for FY 1986 | 0 | | | | |
| Allocation for FY 1986 | 0 | | | | |
| Allocations to Date | 0 | 0 | | | |
| Allocation Requested for FY 1987 | 1,100,000 | 8 | | | |
| Scheduled Balance to Complete after FY 1987 | 13,100,000 | | | | |
| Unscheduled Balance to Complete after FY 1987 | 0 | | | | |

Division: North Central District: Rock Island Region: Upper Mississippi

Lock and Dam No. 21, Illinois

**JUSTIFICATION:** Many features of the facility are in an advanced state of deterioration. The vertical monolith joints in the lock walls are deteriorated and badly abraded as a result of barges scraping the walls; protection angles at some of the ladder recesses and miter gate recess corners have been stripped off by barges; the horizontal walking surface of the lock walls are spalled and cracked in several locations resulting in safety hazards due to the uneven surfaces; and the armor plate ice breaker on the nose of the dam piers has separated from the concrete. The main lock gate machinery, the lock valve machinery, and electrical equipment are in poor condition due to over 47 years of use; structural steel components consisting of lock gates, lock tainter valves, service bridge across the dam, roller and tainter emergency bulkheads, and the dams roller and tainter gates are in varying degrees of disrepair. Additional scour protection downstream of the dam is required to meet new project design criteria for navigation dam stilling basins. Rehabilitation is essential to extend the useful life of this lock and dam. Delaying the work will risk interruption to navigation due to frequent shutdowns for major repairs and will result in increased total maintenance cost to the Government.

Traffic through the lock for the past five years is as follows:

| Year | Commercial Tonnage | Number of Lockages Commercial Vessels |
|---|---|---|
| 1980 | 30,925,000 | 5,680 |
| 1981 | 32,412,000 | 5,949 |
| 1982 | 29,635,000 | 5,321 |
| 1983 | 35,810,000 | 6,325 |
| 1984 | 33,982,000 | 5,653 |

**FISCAL YEAR 1987:** The requested amount will be applied as follows:

| | |
|---|---|
| Initiate: Dam Rehabilitation | $ 700,000 |
| Engineering and Design | 305,000 |
| Supervision and Administration | 95,000 |
| Total | $1,100,000 |

Funds requested are based on an economical rate of construction with project completion scheduled for September 1990.

**COMPARISON OF FEDERAL COST ESTIMATES:** The current Federal cost estimate of $14,200,000 is the initial estimate presented to Congress. This estimate includes $1,400,000 for an estimated inflation allowance from 1 October 1985 through the construction period.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT:

a. Status of Environmental Impact Statement: The operation of the Upper Mississippi River for commercial navigation has been addressed in the Environmental Impact Statement entitled "Operation and Maintenance of the Upper Mississippi River Nine-Foot Navigation Channel," which was filed with Council on Environmental Quality in July 1974. In regard to the proposed rehabilitation work, an Environmental Assessment will be coordinated in the first quarter of Fiscal Year 1987 to satisfy the requirements of the National Environmental Policy Act in accordance with the guidelines of the Council on Environmental Quality. If no significant impacts are identified, a Finding of No Significant Impact will be prepared and scheduled for signature by the District Commander in the second quarter of Fiscal Year 1987.

b. Compliance with Clean Water Act: The provisions of Section 404 of the Clean Water Act are scheduled to be met by a Section 404 (b)(1) Evaluation in the first quarter of Fiscal Year 1987, a Public Notice issued in the first quarter Fiscal Year 1987, a Certification from the States of Illinois and Missouri in the second quarter Fiscal Year 1987, and the District Commander's signature on the Evaluation Report in the second quarter Fiscal Year 1987.

OTHER INFORMATION: Plans and Specifications for the first stage of construction are scheduled for approval in March 1987. Initiation of construction is scheduled for June 1987. The Rock Island Field Office of the United States Department of the Interior, Fish and Wildlife Service, has recommended that in lieu of site specific Environmental Assessments for individual rehabilitation projects, a systemic Environmental Impact Statement be prepared encompassing all the proposed lock and dam projects on the Upper Mississippi River and Illinois Waterway. Their concern is that incorporating the latest technology in the safety and efficiency structural measures proposed will increase the system capacity. The Corps position is that the work included in the proposed rehabilitation does not or is not being taken to increase the navigation capacity of the Upper Mississippi River system. Further agency coordination is ongoing.

## HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: North Central
District: Rock Island

Project: Mississippi River, Between Missouri River and Minneapolis, Minnesota, Lock and Dam No. 21, Illinois

| | Estimates Presented to Congress ($1,000) | | | | |
|---|---|---|---|---|---|
| | Original Baseline (1) | Cumulative Changes (2) | Last (3) | Incremental Change (4) | Current (5) |
| Federal Cost<br>(Price Level) | 12,800<br>(Oct 1985) | | 2/ | | 14,200 1/ |
| Reason for Change | | 0 | | (1,400) 1/ | |
| a. Price Escalation | | 0 | | 1,400 | |
| b. Design Changes | | 0 | | 0 | |
| c. Additional Function Added Under General Authorization | | 0 | | 0 | |
| d. Authorized Modification | | 0 | | 0 | |
| e. Post-Contract Award and Other Estimating Adjustments | | 0 | | 0 | |
| f. Schedule Changes | | 0 | | 0 | |
| g. Sundry | | 0 | | 0 | |
| h. Real Estate | | 0 | | 0 | |

1/ Includes $1,400 allowance for estimated inflation from 1 October 1985 through the construction period.

2/ Project has not previously been presented to Congress.

REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: OPERATION AND MAINTENANCE, GENERAL

CLASSIFICATION: NAVIGATION (LOCKS AND DAMS) MAJOR REHABILITATION

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 1986 AND 1987

| LINE NO | ITEM (a) | PROJECT COST ESTIMATE (b) | TOTAL TO 30 SEP 1985 (c) | CURRENT FY 1986 (d) | BUDGET FY 1987 (e) | BALANCE TO COMPLETE AFTER FY 1987 (f) |
|---|---|---|---|---|---|---|
| 1 | DAMS | $ 3,620,000 | 0 | 0 | $ 700,000 | $ 2,920,000 |
| 2 | LOCKS | 9,180,000 | 0 | 0 | 0 | 9,180,000 |
| 3 | ENGINEERING AND DESIGN | 760,000 | 0 | 0 | 305,000 | 455,000 |
| 4 | SUPERVISION AND ADMINISTRATION | 640,000 | 0 | 0 | 95,000 | 545,000 |
| 5 | | | | | | |
| 6 | | | | | | |
| 7 | TOTAL APPLIED COSTS (Federal Funds Only) | 14,200,000 | 0 | 0 | 1,100,000 | 13,100,000 |
| 8 | Undistributed Costs (None) | | | | | |
| 9 | TOTAL PROJECT COSTS (Federal Funds Only) | 14,200,000 | 0 | 0 | 1,100,000 | 13,100,000 |
| 10 | Pending Adjustments (None) | | | | | |
| 11 | TOTAL COSTS (Federal Funds Only) | 14,200,000 | 0 | 0 | 1,100,000 | 13,100,000 |
| 12 | Undelivered Orders | | | | | |
| 13 | TOTAL OBLIGATIONS | | 0 | 0 | 1,100,000 | 13,100,000 |
| 14 | | | | | | |
| 15 | | | | | | |
| 16 | METHOD OF FINANCING | | | | | |
| 17 | FEDERAL FUNDS | | | | | |
| 18 | Allocations | | 0 | 0 | | |
| 19 | Unobligated Carryover from Prior Year | | | 0 | | |
| 20 | Total Funds Available for Obligation | | | 0 | | |
| 21 | Appropriations Required | | | | 1,100,000 | 13,100,000 |
| 22 | | | | | | |
| 23 | | | | | | |
| 24 | NON-FEDERAL FUNDS | | | | | |
| 25 | Cash Contributions | 0 | | | | |
| 26 | Other Costs | 0 | | | | |
| 27 | Lands & Damages | (0) | | | | |
| 28 | Relocations | (0) | | | | |
| 29 | Other | (0) | | | | |
| 30 | TOTAL NON-FEDERAL COSTS | 0 | | | | |
| 31 | | | | | | |
| 32 | | | | | | |
| 33 | | | | | | |

EFFECTIVE DATE 1 JAN 86

DIVISION NORTH CENTRAL

DISTRICT ROCK ISLAND

REGION UPPER MISSISSIPPI

BASIN ROCK-MISS-DES MOINES

PROJECT MISSISSIPPI RIVER BETWEEN MISSOURI RIVER & MINNEAPOLIS, MN., LOCK AND DAM NO. 21, ILLINOIS

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE.

**APPROPRIATION TITLE:** Operation and Maintenance - Major Rehabilitation - Locks and Dams (Navigation)

**PROJECT:** Mississippi River between Missouri River and Minneapolis, Minnesota, Locks and Dams Nos. 3, 5A, 6, 7, 8, and 9, Minnesota, Wisconsin and Iowa

**LOCATION AND DESCRIPTION:** Locks and Dams 3 and 5A-9 are located on the Mississippi River between river miles 797 and 648 and approximately between Red Wing, Minnesota and Prairie du Chien, Wisconsin.

**PRESENT CONDITION:** The original structures were placed in operation between 1936 to 1938. Each lock and dam consists of a lock (standard dimensions of 600 ft. long by 110 ft. wide), an uncompleted auxiliary lock, a dam consisting of movable gates to control river elevation and an earth embankment. Work items under the major rehabilitation program are the replacement and/or refurbishing of the mechanical and electrical systems. This includes the machinery and control systems that operate the lock gates, the valves that control the level of water in the lock and the movable gates of the dam.

**AUTHORIZATION:** River and Harbor Act of 1930.

**BENEFIT COST RATIO:** The remaining benefit-remaining cost ratio is not applicable because monetary benefits have not been quantified.

**SUMMARIZED FINANCIAL DATA**

| | | Accum % of Est. Fed. Cost |
|---|---|---|
| Estimated Federal Cost | $23,100,000 | |
| Estimated Non-Federal Cost | 0 | |
| Total Estimated Project Cost | $23,100,000 | |
| Allocations to 30 September 1985 | 0 | |
| Conference Allowance for FY 1986 | 0 | |
| Allocation for FY 1986 | 0 | |
| Allocations to Date | 0 | 0 |
| Allocations Requested for FY 1987 | 4,000,000 | 17 |
| Scheduled Balance to Complete after FY 1987 | 19,100,000 | |
| Unscheduled Balance to Complete after FY 1987 | 0 | |

| **STATUS:** (1 January 1986) | PERCENT COMPLETE | COMPLETION SCHEDULE |
|---|---|---|
| Project not yet started. | 0 | Feb 1993 |

DIVISION: North Central

DISTRICT: St. Paul

REGION: Mississippi River between
Missouri River and Minneapolis, Minnesota,
Locks and Dams Nos. 3, 5A, 6, 7, 8 and 9
Minnesota, Wisconsin and Iowa

**JUSTIFICATION:** The mechanical and electrical systems of the locks and dams have reached or exceeded their useful life of 50 years. Breakdown of the electrical and mechanical equipment will become increasingly more frequent. Many of the mechanical components are custom made and a malfunction of any of the parts could shut down a lock for extended periods of time while replacement parts are being manufactured. A major failure of the mechanical system could close operation of the lock for 2 to 3 months. Frequent minor breakdowns which will close the lock for 2 to 3 days at a time are anticipated.

**FISCAL YEAR 1987 :** The requested amount will be applied as follows:

| | |
|---|---|
| Initiate: Lock Machinery and Control Systems Improvements | $2,400,000 |
| Dam Gate Chains and Electrical Systems Improvements | 500,000 |
| Engineering and Design | 1,000,000 |
| Supervision and Administration | 100,000 |
| Total | $4,000,000 |

The funds requested for FY 1987 are based on an economical rate of construction progress with completion of the entire project scheduled for February 1993.

**NON-FEDERAL COST:** There are no non-Federal costs.

**COMPARISON OF FEDERAL COST ESTIMATES:** The current Federal cost estimate is $23,100,000. No previous estimate has been submitted to Congress.

**STATUS OF LOCAL COOPERATION:** Local cooperation is not required since the locks and dams are located on government owned property.

**STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT:** Rehabilitation/replacement of the mechanical and electrical systems would not result in any significant adverse environmental effects. The necessary National Environmental Policy Act documentation will be prepared in FY 1986/87. A section 404(b)(1) evaluation and state water quality certification will be obtained if necessary in FY 1986/87.

OTHER INFORMATION: Initial funds for reconnaissance and engineering and design studies were obtained in FY 1984 and 1985 under the O&M, General appropriation. The initial contract for the supply of lock machinery and control systems is scheduled to be awarded for the first quarter of FY 1987. The initial contract for dam control systems is scheduled to be awarded by the third quarter of FY 1987. Rehabilitation work on locks and dams 2, 4, 5, and 10 is similar to that needed for locks and dams 3, 5A, 6, 7, 8, and 9. The former is being accomplished under the O&M, General appropriation.

## HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATES:

**Division:** North Central
**District:** St. Paul

**Project:** Mississippi River between Missouri River and Minneapolis, Minnesota, Locks and Dams Nos. 3, 5A, 6, 7, 8 and 9 Minnesota, Wisconsin and Iowa

| | Estimates Presented to Congress ($1,000) | | | | |
|---|---|---|---|---|---|
| Item | Original Baseline (1) | Cumulative Changes (2) | Last (3) | Incremental Change (4) | Current (5) |
| Federal Cost<br>(Price Level) | 21,100<br>(Oct 1985) | | No previous estimate presented to Congress | | 23,100[1]<br>(Oct 1985) |

Reason for Change
a. Price Escalation
b. Design Changes
c. Additional Function Added Under General Authorization
d. Authorized Modification
e. Post-Contract Award and Other Estimating Adjustments
f. Schedule Changes
g. Sundry
h. Real Estate

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[1] Includes $2,000 allowance for estimated inflation from 1 October 1985 through the construction period.

REPORTS CONTROL SYMBOL: DAEN-CWO-61

APPROPRIATION TITLE: CONSTRUCTION GENERAL
Operation and Maintenance

CLASSIFICATION:
Major Rehabilitation - Locks and Dams (Navigation)

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM (a) | PROJECT COST ESTIMATE (b) | TOTAL TO 30 SEP 19 85 (c) | CURRENT FY 1986 (d) | BUDGET FY 1987 (e) | BALANCE TO COMPLETE AFTER FY 19 87 (f) |
|---|---|---|---|---|---|---|
| 1 | DAMS | 3,140,000 | 0 | 0 | 500,000 | 2,640,000 |
| 2 | LOCKS | 16,733,000 | 0 | 0 | 2,400,000 | 14,333,000 |
| 3 | ENGINEERING AND DESIGN | 2,065,000 | 0 | 0 | 1,000,000 | 1,065,000 |
| 4 | SUPERVISION AND ADMINISTRATION | 1,162,000 | 0 | 0 | 100,000 | 1,062,000 |
| 5 | | | | | | |
| 6 | TOTAL APPLIED COST (FEDERAL FUNDS ONLY) | 23,100,000 | 0 | 0 | 4,000,000 | 19,100,000 |
| 7 | UNDISTRIBUTED COST (NONE) | | | | | |
| 8 | TOTAL PROJECT COST (FEDERAL FUNDS ONLY) | 23,100,000 | 0 | 0 | 4,000,000 | 19,100,000 |
| 9 | PENDING ADJUSTMENTS (NONE) | | | | | |
| 10 | TOTAL COST (FEDERAL FUNDS ONLY) | 23,100,000 | 0 | 0 | 4,000,000 | 19,100,000 |
| 11 | UNDELIVERED ORDERS | | | | | |
| 12 | TOTAL OBLIGATIONS | | 0 | 0 | 4,000,000 | 19,100,000 |
| 13 | | | | | | |
| 14 | METHOD OF FINANCING | | | | | |
| 15 | ALLOCATIONS | | | | | |
| 16 | UNOBLIGATED CARRY-OVER FROM PRIOR YEAR | | | | | |
| 17 | TOTAL FUNDS AVAILABLE FOR OBLIGATION | | | | | |
| 18 | APPROPRIATIONS REQUIRED | | | | 4,000,000 | 19,100,000 |
| 19 | | | | | | |
| 20 | | | | | | |
| 21 | | | | | | |
| 22 | | | | | | |
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| | | | |
|---|---|---|---|
| EFFECTIVE DATE<br>1 JAN 1986 | DIVISION NORTH CENTRAL<br>DISTRICT ST. PAUL | REGION UPPER MISSISSIPPI<br>BASIN BLACK-ROOT-CHIPPEWA-WISCONSIN | PROJECT MISSISSIPPI RIVER BETWEEN MISSOURI RIVER AND MINNEAPOLIS, MN - L&D's 3, 5A-9, MN, WI & IA (Major Rehab) |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE.

APPROPRIATION TITLE: Operations and Maintenance, General - Major Rehabilitation - Locks and Dams (Navigation)

PROJECT: Mississippi River, between Missouri River and Minneapolis, Minnesota - Lock and Dam No. 22, Missouri (Rehabilitation of Lock and Dam)

LOCATION AND DESCRIPTION: The project is located at Mississippi River Mile 301, just downstream from Saverton, Missouri. The facility is a unit of the Inland Waterway Navigation System of the Upper Mississippi River Basin and is one of 29 such facilities in the system between Minneapolis, Minnesota, and St. Louis, Missouri. The structure was placed in operation in July 1938. Significant features of the proposed rehabilitation include resurfacing deteriorated concrete areas on the lock walls and dam piers; overhauling and painting the main and auxiliary lock gates; replacing the lock gate and lock valve operating machinery; replacing the electrical equipment; repairing side seal plates, replacing seals, and painting the dam roller gates; replacing seals, and painting the dam tainter gates; repairing the overflow section of the dam; repairing, replacing seals, and painting the roller and tainter gate emergency bulkheads; and constructing a guardwall upstream of the lock's riverwall.

AUTHORIZATION: River and Harbor Act of 1930.

BENEFIT-COST RATIO: The remaining benefit-remaining cost ratio is not applicable because monetary benefits have not been quantified.

| SUMMARIZED FINANCIAL DATA | | Accum. % of Est. Fed. Cost | STATUS: (1 January 1986) | PERCENT COMPLETE | COMPLETION SCHEDULE |
|---|---|---|---|---|---|
| Estimated Federal Cost | $15,600,000 | | Project Not Yet Started | | Sep 1990 |
| Estimated Non-Federal Cost | 0 | | | | |
| Total Estimated Project Cost | $15,600,000 | | | | |
| Allocations to 30 September 1985 | 0 | | | | |
| Conference Allowance for FY 1986 | 0 | | | | |
| Allocation for FY 1986 | 0 | | | | |
| Allocations to Date | 0 | 0 | | | |
| Allocation Requested for FY 1987 | 1,600,000 | 10 | | | |
| Scheduled Balance to Complete after FY 1987 | 14,000,000 | | | | |
| Unscheduled Balance to Complete after FY 1987 | 0 | | | | |

Division: North Central District: Rock Island Region: Upper Mississippi
Lock and Dam No. 22, Missouri

JUSTIFICATION: Many features of the facility are in an advanced state of deterioration. The vertical monolith joints in the lock walls are deteriorated and badly abraded as a result of barges scraping the walls; protection angles at some of the ladder recesses and all the miter gate recess corners have been stripped off by barges; the horizontal walking surface of the lock walls are spalled and cracked in several locations resulting in safety hazards due to the uneven surfaces; and the armor plate ice breaker on the nose of the dam piers has separated from the concrete. The main lock gate machinery, the lock valve machinery, and electrical equipment are in poor condition due to over 47 years of use; structural steel components consisting of lock gates, lock tainter valves, service bridge across the dam, roller and tainter emergency bulkheads, and the dams roller and tainter gates are in varying degrees of disrepair. A guardwall, similar to ones at Lock and Dam Nos. 21, 20, 18, 14 and 11, needs to be constructed upstream of the riverwall to protect the dam from tows and barges that are out of control due to the severe outdraft problem. Rehabilitation is essential to extend the useful life of this lock and dam. Delaying the work will risk interruption to navigation due to frequent shutdowns for major repairs and will result in increased total maintenance cost to the Government.

Traffic through the lock for the past five years is as follows:

| Year | Commercial Tonnage | Number of Lockages Commercial Vessels |
|---|---|---|
| 1980 | 31,450,000 | 5,624 |
| 1981 | 32,723,000 | 5,968 |
| 1982 | 30,238,000 | 5,409 |
| 1983 | 36,358,000 | 6,318 |
| 1984 | 34,600,000 | 5,718 |

FISCAL YEAR 1987: The requested amount will be applied as follows:

| | |
|---|---|
| Initiate: Lock Rehabilitation | $1,160,000 |
| Engineering and Design | 350,000 |
| Supervision and Administration | 90,000 |
| Total | $1,600,000 |

Funds requested are based on an economical rate of construction with project completion scheduled for September 1990.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $15,600,000 is the initial estimate presented to Congress. This estimate includes $1,500,000 for an estimated inflation allowance from 1 October 1985 through the construction period.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT:

a. Status of Environmental Impact Statement: The operation of the Upper Mississippi River for commercial navigation has been addressed in the Environmental Impact Statement entitled "Operation and Maintenance of the Upper Mississippi River Nine-Foot Navigation Channel," which was filed with Council on Environmental Quality in July 1974. In regard to the proposed rehabilitation work, an Environmental Assessment will be coordinated in the first quarter of Fiscal Year 1987 to satisfy the requirements of the National Environmental Policy Act in accordance with the guidelines of the Council on Environmental Quality. If no significant impacts are identified, a Finding of No Significant Impact will be prepared and scheduled for signature by the District Commander in the second quarter of Fiscal Year 1987.

b. Compliance with Clean Water Act: The provisions of Section 404 of the Clean Water Act are scheduled to be met by a Section 404 (b)(1) Evaluation in the first quarter of Fiscal Year 1987, a Public Notice issued in the first quarter Fiscal Year 1987, a Certification from the States of Illinois and Missouri in the first quarter Fiscal Year 1987, and the District Commander's signature on the Evaluation Report in the second quarter Fiscal Year 1987.

OTHER INFORMATION: Plans and Specifications for the first stage of construction are scheduled for approval in April 1987. Initiation of construction is scheduled for June 1987. The Rock Island Field Office of the United States Department of the Interior, Fish and Wildlife Service, has recommended that in lieu of site specific Environmental Assessments for individual rehabilitation projects, a systemic Environmental Impact Statement be prepared encompassing all the proposed lock and dam projects on the Upper Mississippi River and Illinois Waterway. Their concern is that incorporating the latest technology in the safety and efficiency structural measures proposed will increase the system capacity. The Corps position is that the work included in the proposed rehabilitation does not or is not being taken to increase the navigation capacity of the Upper Mississippi River system. Further agency coordination is ongoing.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: North Central
District: Rock Island

Project: Mississippi River, Between Missouri River and Minneapolis, Minnesota, Lock and Dam No. 22, Missouri

| | Estimates Presented to Congress ($1,000) | | | | |
|---|---|---|---|---|---|
| | Original Baseline (1) | Cumulative Changes (2) | Last (3) | Incremental Change (4) | Current (5) |
| Federal Cost<br>(Price Level) | 14,100<br>(Oct 1985) | | 2/ | | 15,600 1/ |
| Reason for Change | | 0 | | (1,500) 1/ | |
| a. Price Escalation | | 0 | | 1,500 | |
| b. Design Changes | | 0 | | 0 | |
| c. Additional Function Added Under General Authorization | | 0 | | 0 | |
| d. Authorized Modification | | 0 | | 0 | |
| e. Post-Contract Award and Other Estimating Adjustments | | 0 | | 0 | |
| f. Schedule Changes | | 0 | | 0 | |
| g. Sundry | | 0 | | 0 | |
| h. Real Estate | | 0 | | 0 | |

1/ Includes $1,500 allowance for estimated inflation from 1 October 1985 through the construction period.

2/ Project has not previously been presented to Congress.

REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: ~~CONSTRUCTION GENERAL~~
OPERATION AND MAINTENANCE, GENERAL

CLASSIFICATION: NAVIGATION (LOCKS & DAMS)
MAJOR REHABILITATION

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 1986 AND 19 87

| LINE NO | ITEM (a) | PROJECT COST ESTIMATE (b) | TOTAL TO 30 SEP 19 85 (c) | CURRENT FY 19 86 (d) | BUDGET FY 19 87 (e) | BALANCE TO COMPLETE AFTER FY 19 87 (f) |
|---|---|---|---|---|---|---|
| 1 | DAMS | $ 2,530,000 | 0 | 0 | 0 | $ 2,530,000 |
| 2 | LOCKS | 11,530,000 | 0 | 0 | 1,160,000 | 10,370,000 |
| 3 | ENGINEERING AND DESIGN | 820,000 | 0 | 0 | 350,000 | 470,000 |
| 4 | SUPERVISION AND ADMINISTRATION | 720,000 | 0 | 0 | 90,000 | 630,000 |
| 5 | | | | | | |
| 6 | | | | | | |
| 7 | TOTAL APPLIED COSTS (Federal Funds Only) | 15,600,000 | 0 | 0 | 1,600,000 | 14,000,000 |
| 8 | Undistributed Costs (None) | | | | | |
| 9 | TOTAL PROJECT COSTS (Federal Funds Only) | 15,600,000 | 0 | 0 | 1,600,000 | 14,000,000 |
| 10 | Pending Adjustments (None) | | | | | |
| 11 | TOTAL COSTS (Federal Funds Only) | 15,600,000 | 0 | 0 | 1,600,000 | 14,000,000 |
| 12 | Undelivered Orders | | | | | |
| 13 | TOTAL OBLIGATIONS | | 0 | 0 | 1,600,000 | 14,000,000 |
| 14 | | | | | | |
| 15 | | | | | | |
| 16 | METHOD OF FINANCING | | | | | |
| 17 | FEDERAL FUNDS | | | | | |
| 18 | Allocations | | 0 | 0 | | |
| 19 | Unobligated Carryover from Prior Year | | | 0 | | |
| 20 | Total Funds Available for Obligation | | | 0 | | |
| 21 | Appropriations Required | | | | 1,600,000 | 14,000,000 |
| 22 | | | | | | |
| 23 | NON-FEDERAL COSTS | | | | | |
| 24 | Cash Contributions | 0 | | | | |
| 25 | Other Costs | 0 | | | | |
| 26 | Lands & Damages | (0) | | | | |
| 27 | Relocations | (0) | | | | |
| 28 | Other | (0) | | | | |
| 29 | TOTAL NON-FEDERAL COSTS | 0 | | | | |
| 30 | | | | | | |
| 31 | | | | | | |
| 32 | | | | | | |
| 33 | | | | | | |

| | | | |
|---|---|---|---|
| EFFECTIVE DATE 1 JAN 86 | DIVISION NORTH CENTRAL<br>DISTRICT ROCK ISLAND | REGION UPPER MISSISSIPPI<br>BASIN ROCK-MISS-DES MOINES | PROJECT MISSISSIPPI RIVER BETWEEN MISSOURI RIVER & MINNEAPOLIS, MN., LOCK AND DAM NO. 22, MISSOURI |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE.

APPROPRIATION TITLE: Operations and Maintenance, General - Major Rehabilitation - Locks and Dams (Navigation)

PROJECT: Illinois Waterway, LaGrange Lock and Dam, Illinois (Rehabilitation of Lock and Dam) (Continuing)

LOCATION AND DESCRIPTION: The project is located 80 miles upstream from the mouth of the Illinois River and about 8 miles downstream from Beardstown, Illinois. The lock chamber is 110 feet wide by 600 feet long with a normal lift of 10 feet. The dam is a wicket design and is one of the few remaining wicket dams in the country. Significant features of the proposed rehabilitation include resurfacing the dam sill and baffle blocks; placement of derrick stone and riprap for additional scour protection downstream of the dam sill; rebuilding the lower and upper lock guidewalls; resurfacing spalled and abraded areas of the lock walls; and replacing a section of the wicket dam with two submersible tainter gates.

AUTHORIZATION: River and Harbor Act of 1930.

BENEFIT-COST RATIO: The remaining benefit-remaining cost ratio is not applicable because monetary benefits have not been quantified.

| SUMMARIZED FINANCIAL DATA | | Accum. % of Est. Fed. Cost |
|---|---|---|
| Estimated Federal Cost | $20,900,000 | |
| Estimated Non-Federal Cost | 0 | |
| Total Estimated Project Cost | $20,900,000 | |
| Allocations to 30 September 1985 | 0 | |
| Conference Allowance for FY 1986 | 1,700,000 | |
| Allocation for FY 1986 | 1,700,000 | |
| Allocations to Date | 1,700,000 | 8 |
| Allocation Requested for FY 1987 | 5,700,000 | 35 |
| Scheduled Balance to Complete after FY 1987 | 13,500,000 | |
| Unscheduled Balance to Complete after FY 1987 | 0 | |

| STATUS: (1 January 1986) | PERCENT COMPLETE | COMPLETION SCHEDULE |
|---|---|---|
| Project Not Yet Started | | Dec 1989 |

Division: North Central District: Rock Island Region: Upper Mississippi
Illinois Waterway, LaGrange Lock and Dam, Illinois

JUSTIFICATION: Certain components of the facility are in an advanced state of deterioration and the operation of the wicket dam is costly and hazardous to both Government personnel and equipment. The upper and lower steel sheet pile lock guidewalls are severely corroded; the concrete lockwall monolith joints are eroded; the lock gate machinery is worn after over 45 years of service; the wicket dam's concrete sill, apron, and baffle blocks are eroded; and scour holes exist downstream of the dam. Failure resulting in loss of pool would seriously disrupt commercial navigation. Delaying the work will risk interruption to navigation due to frequent shutdowns for major repairs and will result in increased total maintenance cost to the Government.

Traffic through the lock for the past five years is as follows:

| Year | Commercial Tonnage | Number of Lockages Commercial Vessels |
|---|---|---|
| 1980 | 33,790,000 | 5,780 |
| 1981 | 32,964,000 | 5,404 |
| 1982 | 32,837,000 | 5,046 |
| 1983 | 33,447,000 | 4,796 |
| 1984 | 31,251,000 | 4,546 |

FISCAL YEAR 1987: The requested amount will be applied as follows:

| | |
|---|---|
| Continue: Construction of Stg I, Wicket Dam and Lock Rehab | $4,500,000 |
| Initiate: Construction of Stg II, Replacement Gates, Wicket Dam | 400,000 |
| Engineering and Design | 440,000 |
| Supervision and Administration | 360,000 |
| Total | $5,700,000 |

Funds requested are based on an economical rate of construction with project completion scheduled for December 1989.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $20,900,000 is a decrease of $1,000,000 from the latest estimate ($21,900,000) presented to Congress. The decrease is due to adjustments in the estimated inflation allowance through the construction period.

## STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT:

a. Status of Environmental Impact Statement: The operation and maintenance of the Illinois Waterway for commercial navigation has been addressed in the Environmental Impact Statement entitled "Operation and Maintenance of the Cal-Sag Channel and the Chicago Sanitary and Ship Canal to the LaGrange Lock and Dam," which was filed with the Council on Environmental Quality on 1 December 1975. In regard to the proposed rehabilitation work, an Environmental Assessment will be coordinated in the second quarter of Fiscal Year 1986 to satisfy the requirements of the National Environmental Policy Act in accordance with the guidelines of the Council on Environmental Quality. If no significant impacts are identified, a Finding of No Significant Impact will be prepared and scheduled for signature by the District Commander in the second quarter of Fiscal Year 1986.

b. Compliance with Clean Water Act: The provisions of the Clean Water Act are scheduled to be met by a Section 404(b)(1) Evaluation, in the second quarter of Fiscal Year 1986, a Public Notice issued in the second quarter Fiscal Year 1986, a Certification from the State of Illinois in the second quarter Fiscal Year 1986, and the District Commander's signature on the Evaluation Report in the second quarter Fiscal Year 1986.

OTHER INFORMATION: Plans and specifications for the first stage of construction are scheduled for approval in April 1986. The first construction contract is scheduled for award in May 1986. Overall project completion has been extended one year because additional time was required to resolve technical problems associated with the design of new gates to replace a section of the wicket dam.

The Rock Island Field Office of the United States Department of the Interior, Fish and Wildlife Service, has recommended that in lieu of site specific Environmental Assessments for individual rehabilitation projects, a systemic Environmental Impact Statement be prepared encompassing all the proposed lock and dam projects on the Upper Mississippi River and Illinois Waterway. Their concern is that incorporating the latest technology in the safety and efficiency structural measures proposed will increase the system capacity. The Corps position is that the work included in the proposed rehabilitation does not or is not being taken to increase the navigation capacity of the Upper Mississippi River system. Further agency coordination is ongoing.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: North Central
District: Rock Island

Project: Illinois Waterway, LaGrange Lock and Dam, Illinois

| Item | Estimates Presented to Congress ($1,000) Original Baseline (1) | Cumulative Changes (2) | Last (3) | Incremental Change (4) | Current (5) |
|---|---|---|---|---|---|
| Federal Cost<br>(Price Level) | 19,800<br>(Oct 84) | | 21,900 1/ | | 20,900 1/ 2/ |
| Reason for Change | | (2,100) 1/ | | (-1,000) 2/ | |
| a. Price Escalation | | 2,100 | | -1,000 | |
| b. Design Changes | | 0 | | 0 | |
| c. Additional Function Added Under General Authorization | | 0 | | 0 | |
| d. Authorized Modification | | 0 | | 0 | |
| e. Post-Contract Award and Other Estimating Adjustments | | 0 | | 0 | |
| f. Schedule Changes | | 0 | | 0 | |
| g. Sundry | | 0 | | 0 | |
| h. Real Estate | | 0 | | 0 | |

1/ Includes an allowance for estimated inflation through the construction period.

2/ Includes a decrease of $1,000 for adjustments in the estimated inflation allowance through the construction period.

REPORTS CONTROL SYMBOL: DAEN-CWB-13

| | | |
|---|---|---|
| APPROPRIATION TITLE: ~~CONSTRUCTION, GENERAL~~<br>OPERATION AND MAINTENANCE, GENERAL | CLASSIFICATION: NAVIGATION (LOCKS AND DAMS)<br>MAJOR REHABILITATION | |

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM | PROJECT COST ESTIMATE | TOTAL TO 30 SEP 19 85 | CURRENT FY 19 86 | BUDGET FY 19 87 | BALANCE TO COMPLETE AFTER FY 19 87 |
|---|---|---|---|---|---|---|
| | (a) | (b) | (c) | (d) | (e) | (f) |
| 1 | DAMS | $12,800,000 | 0 | $ 300,000 | $1,300,000 | $11,200,000 |
| 2 | LOCKS | 5,710,000 | 0 | 620,000 | 3,600,000 | 1,490,000 |
| 3 | ENGINEERING AND DESIGN | 1,330,000 | 0 | 650,000 | 440,000 | 240,000 |
| 4 | SUPERVISION AND ADMINISTRATION | 1,060,000 | 0 | 130,000 | 360,000 | 570,000 |
| 5 | | | | | | |
| 6 | | | | | | |
| 7 | TOTAL APPLIED COSTS (Federal Funds Only) | 20,900,000 | 0 | 1,700,000 | 5,700,000 | 13,500,000 |
| 8 | Undistributed Costs (None) | | | | | |
| 9 | TOTAL PROJECT COSTS (Federal Funds Only) | 20,900,000 | 0 | 1,700,000 | 5,700,000 | 13,500,000 |
| 10 | Pending Adjustments (None) | | | | | |
| 11 | TOTAL COSTS (Federal Funds Only) | 20,900,000 | 0 | 1,700,000 | 5,700,000 | 13,500,000 |
| 12 | Undelivered Orders | | | | | |
| 13 | TOTAL OBLIGATIONS | | 0 | 1,700,000 | 5,700,000 | 13,500,000 |
| 14 | | | | | | |
| 15 | | | | | | |
| 16 | METHOD OF FINANCING | | | | | |
| 17 | FEDERAL FUNDS | | | | | |
| 18 | Allocations | | 0 | 1,700,000 | | |
| 19 | Unobligated Carryover from Prior Year | | | 0 | | |
| 20 | Total Funds Available for Obligation | | | 1,700,000 | | |
| 21 | Appropriations Required | | | | 5,700,000 | 13,500,000 |
| 22 | | | | | | |
| 23 | NON-FEDERAL FUNDS | | | | | |
| 24 | Cash Contributions | 0 | | | | |
| 25 | Other Costs | 0 | | | | |
| 26 | Lands & Damages | (0) | | | | |
| 27 | Relocations | (0) | | | | |
| 28 | Other | (0) | | | | |
| 29 | TOTAL NON-FEDERAL COSTS | 0 | | | | |
| 30 | | | | | | |
| 31 | | | | | | |
| 32 | | | | | | |
| 33 | | | | | | |

| | | | |
|---|---|---|---|
| EFFECTIVE DATE<br>1 JAN 86 | DIVISION NORTH CENTRAL<br>DISTRICT ROCK ISLAND | REGION UPPER MISSISSIPPI<br>BASIN SALT-SNY-ILLINOIS | PROJECT ILLINOIS WATERWAY LaGRANGE LOCK AND DAM, ILLINOIS |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE.

APPROPRIATION TITLE: Operations and Maintenance, General - Major Rehabilitation - Locks and Dams (Navigation)

PROJECT: Illinois Waterway, Marseilles Dam, Illinois (Rehabilitation of Dam) (Continuing)

LOCATION AND DESCRIPTION: The project is located at the mouth of the Marseilles Canal at river mile 247 on the Illinois River, near the city of Marseilles, Illinois, approximately 65 miles southwest of Chicago, Illinois. The dam maintains the pool required for navigation between Marseilles and Dresden Island locks. Rehabilitation required consists of resurfacing concrete on the dam, replacement of tainter gates and machinery, rehabilitation of the walkway bridge, and installation of a surveillance system and remote operating equipment.

AUTHORIZATION: River and Harbor Act of 1930

BENEFIT-COST RATIO: The remaining benefit-remaining cost ratio is not applicable because monetary benefits have not been quantified.

| SUMMARIZED FINANCIAL DATA | | Accum. % of Est. Fed. Cost |
|---|---|---|
| Estimated Federal Cost | $14,000,000 | |
| Estimated Non-Federal Cost | 0 | |
| Total Estimated Project Cost | $14,000,000 | |
| Allocations to 30 September 1985 | 440,000 | |
| Conference Allowance for FY 1986 | 5,900,000 | |
| Allocation for FY 1986 | 5,100,000 [1/] | |
| Allocations to Date | 5,540,000 | 40 |
| Allocation Requested for FY 1987 | 6,900,000 | 89 |
| Scheduled Balance to Complete after FY 1987 | 1,560,000 | |
| Unscheduled Balance to Complete after FY 1987 | 0 | |

[1/] Reflects $800,000 transfer from the project.

| STATUS: (1 January 1986) | PERCENT COMPLETE | COMPLETION SCHEDULE |
|---|---|---|
| Dam, Stg I | 1 | Jan 1988 |
| Stg II | 0 | Jan 1988 |
| Entire Project | 1 | Jan 1988 |

JUSTIFICATION: The dam tainter gates, tainter gate machinery, walkway bridge across the dam, and concrete surfaces are in an advance state of deterioration. Based on engineering analysis, the capacity of the tainter gates is questionable even under normal pool loading conditions due to their age and deteriorated condition. Failure resulting in loss of pool would seriously disrupt commercial navigation. Rehabilitation is needed to insure safety and uninterrupted year-round operation of this project. Delaying the work will result in increased total maintenance costs to the Government.

Division: North Central District: Rock Island Region: Upper Mississippi

Illinois Waterway, Marseilles Dam, Illinois

JUSTIFICATION: (Cont'd)

Traffic through Marseilles lock for the past five years is as follows:

| Year | Commercial Tonnage | Number of Lockages Commercial Vessels |
|---|---|---|
| 1980 | 24,327,000 | 5,695 |
| 1981 | 24,326,000 | 6,170 |
| 1982 | 21,800,000 | 5,763 |
| 1983 | 22,201,000 | 4,659 |
| 1984 | 19,178,000 | 4,164 |

FISCAL YEAR 1987: The requested amount will be applied as follows:

| | |
|---|---|
| Continue: Stg I, Main Dam and Headrace Dam Rehabilitation | $6,000,000 |
| Initiate: Stg II, Surveillance System and Remote Operating Equipment | 380,000 |
| Engineering and Design | 140,000 |
| Supervision and Administration | 380,000 |
| Total | $6,900,000 |

Funds requested are based on an economical rate of construction with project completion scheduled for January 1988.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $14,000,000 is an increase of $2,500,000 from the last estimate ($11,500,000) presented to Congress. This change is due to increases of $4,408,000 based on more detailed planning of construction and $60,000 for Supervision and Administration based on a recent reanalysis of requirements. These increases were partially offset by decreases of $368,000 due to adjustments in the estimated inflation allowance through the construction period and $1,600,000 due to favorable bids received.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT:

a. Status of Environmental Impact Statement: The operation and maintenance of the Illinois Waterway for commercial navigation has been addressed in the Environmental Impact Statement entitled "Operation and Maintenance of a Nine-Foot Channel in the Illinois Waterway from the Junction of the Cal-Sag Channel and the Chicago Sanitary and Ship Canal to the LaGrange Lock and Dam," which was filed with the Council on Environmental Quality on 1 December 1975. With regard to the proposed rehabilitation work, a Finding of No Significant Impact (FONSI) was signed by the District Commander on 15 July 1985.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: (Cont'd)

b. Compliance with Clean Water Act: The provisions of Section 404 of the Clean Water Act have been met by a Section 404(b)(1) evaluation, a Public Notice issued on 16 May 1985, a Certification from the State of Illinois on 3 July 1985, and the District Commander's signature on the Section 404 evaluation report on 15 July 1985.

OTHER INFORMATION: The contract for Stage I, Dam Rehabilitation was awarded on 30 September 1985. The final contract, to complete the project, is scheduled to be awarded in December 1986.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: North Central
District: Rock Island

Project: Illinois Waterway, Marseilles Dam, Illinois

| Item | Estimates Presented to Congress ($1,000) | | | | |
|---|---|---|---|---|---|
| | Original Baseline (1) | Cumulative Changes (2) | Last (3) | Incremental Change (4) | Current (5) |
| Federal Cost<br>(Price Level) | 10,500<br>(Oct 1983) | | 11,500 1/ | | 14,000 1/ 2/ |
| Reason for Change | | (1,000) 1/ | | (+2,500) 2/ | |
| a. Price Escalation | | 1,000 | | -368 | |
| b. Design Changes | | 0 | | 0 | |
| c. Additional Function Added Under General Authorization | | 0 | | 0 | |
| d. Authorized Modification | | 0 | | 0 | |
| e. Post-Contract Award and Other Estimating Adjustments | | 0 | | 2,868 3/ | |
| f. Schedule Changes | | 0 | | 0 | |
| g. Sundry | | 0 | | 0 | |
| h. Real Estate | | 0 | | 0 | |

1/ Includes an allowance for estimated inflation through the construction period.

2/ Includes a decrease of $368 for adjustments in the estimated inflation allowance through the construction period.

3/ Includes increases of $4,408 based on more detailed planning of construction and $60 for Supervision and Administration based on a recent reanalysis of requirements; partially offset by a decrease of $1,600 due to favorable bid received.

REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: OPERATION AND MAINTENANCE, GENERAL

CLASSIFICATION: NAVIGATION (LOCKS AND DAMS)
MAJOR REHABILITATION

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM | PROJECT COST ESTIMATE | TOTAL TO 30 SEP 19 85 | CURRENT FY 19 86 | BUDGET FY 19 87 | BALANCE TO COMPLETE AFTER FY 19 87 |
|---|---|---|---|---|---|---|
| | (a) | (b) | (c) | (d) | (e) | (f) |
| 1 | DAMS | $12,370,000 | $ 0 | $4,500,000 | $6,380,000 | $1,490,000 |
| 2 | ENGINEERING AND DESIGN | 870,000 | 376,000 | 344,000 | 140,000 | 10,000 |
| 3 | SUPERVISION AND ADMINISTRATION | 760,000 | 29,000 | 291,000 | 380,000 | 60,000 |
| 4 | | | | | | |
| 5 | | | | | | |
| 6 | TOTAL APPLIED COSTS (Federal Funds Only) | 14,000,000 | 405,000 | 5,135,000 | 6,900,000 | 1,560,000 |
| 7 | Undistributed Costs (None) | | | | | |
| 8 | TOTAL PROJECT COSTS (Federal Funds Only) | 14,000,000 | 405,000 | 5,135,000 | 6,900,000 | 1,560,000 |
| 9 | Pending Adjustments (None) | | | | | |
| 10 | TOTAL COSTS (Federal Funds Only) | 14,000,000 | 405,000 | 5,135,000 | 6,900,000 | 1,560,000 |
| 11 | Undelivered Orders | | 3,000 | -3,000 | | |
| 12 | TOTAL OBLIGATIONS | | 408,000 | 5,132,000 | 6,900,000 | 1,560,000 |
| 13 | | | | | | |
| 14 | | | | | | |
| 15 | METHOD OF FINANCING | | | | | |
| 16 | FEDERAL FUNDS | | | | | |
| 17 | Allocations | | 440,000 | 5,100,000 1/ | | |
| 18 | Unobligated Carryover from Prior Year | | | 32,000 | | |
| 19 | Total Funds Available for Obligation | | | 5,132,000 | | |
| 20 | Appropriations Required | | | | 6,900,000 | 1,560,000 |
| 21 | | | | | | |
| 22 | | | | | | |
| 23 | NON-FEDERAL COSTS | | | | | |
| 24 | Cash Contributions | 0 | | | | |
| 25 | Other Costs | 0 | | | | |
| 26 | Lands & Damages | (0) | | | | |
| 27 | Relocations | (0) | | | | |
| 28 | Other | (0) | | | | |
| 29 | TOTAL NON-FEDERAL COSTS | 0 | | | | |
| 30 | | | | | | |
| 31 | 1/ Relfects $800,000 transfer from the | | | | | |
| 32 | project. | | | | | |
| 33 | | | | | | |

| | | | |
|---|---|---|---|
| EFFECTIVE DATE<br>1 JAN 86 | DIVISION NORTH CENTRAL<br>DISTRICT ROCK ISLAND | REGION UPPER MISSISSIPPI<br>BASIN SALT-SNY-ILLINOIS | PROJECT ILLINOIS WATERWAY,<br>MARSEILLES DAM, ILLINOIS |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE.

APPROPRIATION TITLE: Operations and Maintenance, General - Major Rehabilitation - Locks and Dams (Navigation)

PROJECT: Illinois Waterway, Peoria Lock and Dam, Illinois (Rehabilitation of Lock and Dam), (Continuing)

LOCATION AND DESCRIPTION: The project is located 157.7 miles upstream from the mouth of the Illinois River and about 2 miles downstream from Peoria, Illinois. The lock chamber is 110 feet wide by 600 feet long with a normal lock lift of 11 feet. The dam is a wicket design and is one of the few remaining wicket dams in the country. Significant features of the proposed rehabilitation include resurfacing of the dam sill and baffle blocks; placement of derrick stone and riprap for additional scour protection downstream of the dam sill; rebuilding the upper lock guidewall; resurfacing spalled and abraded areas of the lockwalls; and replacing a section of the wicket dam with two submersible tainter gates.

AUTHORIZATION: River and Harbor Act of 1930.

BENEFIT-COST RATIO: The remaining benefit-remaining cost ratio is not applicable because monetary benefits have not been quantified.

| SUMMARIZED FINANCIAL DATA | | Accum. % of Est. Fed. Cost | STATUS: (1 January 1986) | PERCENT COMPLETE | COMPLETION SCHEDULE |
|---|---|---|---|---|---|
| Estimated Federal Cost | $17,300,000 | | Project not yet started | | Dec 1989 |
| Estimated Non-Federal Cost | 0 | | | | |
| Total Estimated Project Cost | $17,300,000 | | | | |
| Allocations to 30 September 1985 | 0 | | | | |
| Conference Allowance for FY 1986 | 900,000 | | | | |
| Allocation for FY 1986 | 900,000 | | | | |
| Allocations to Date | 900,000 | 5 | | | |
| Allocation Requested for FY 1987 | 4,100,000 | 29 | | | |
| Scheduled Balance to Complete after FY 1987 | 12,300,000 | | | | |
| Unscheduled Balance to Complete after FY 1987 | 0 | | | | |

Division: North Central District: Rock Island Region: Upper Mississippi
Illinois Waterway, Peoria Lock and Dam, Illinois

JUSTIFICATION: Certain components of the facility are in an advanced state of deterioration and operation of the wicket dam is costly and hazardous to both Government personnel and equipment. The upper steel sheet pile lock guidewall is severely corroded; the concrete lockwall monolith joints are eroded; the lock gate machinery is worn after over 44 years of service; the wicket dam's concrete sill, apron, and baffle blocks are eroded; and scour holes exist downstream of the dam. Failure resulting in loss of pool would seriously disrupt commercial navigation. Delaying the work will risk interruption to navigation due to frequent shutdowns for major repairs and will result in increased total maintenance cost to the Government.

Traffic through the lock for the past five years is as follows:

| Year | Commercial Tonnage | Number of Lockages Commercial Vessels |
|---|---|---|
| 1980 | 34,057,000 | 6,331 |
| 1981 | 33,885,000 | 6,096 |
| 1982 | 31,245,000 | 5,438 |
| 1983 | 32,084,000 | 5,127 |
| 1984 | 28,836,000 | 4,650 |

FISCAL YEAR 1987: The requested amount will be applied as follows:

| | |
|---|---|
| Continue: Construction of Stg. I, Wicket Dam and Lock Rehab. | $2,910,000 |
| Initiate: Construction of Stg. II, Replacement Gates, Wicket Dam | 600,000 |
| Engineering and Design | 370,000 |
| Supervision and Administration | 220,000 |
| Total | $4,100,000 |

Funds requested are based on an economical rate of construction with project completion scheduled for December 1989.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $17,300,000 is a decrease of $900,000 from the last estimate ($18,200,000) presented to Congress. The decrease is due to adjustments in the estimated inflation allowance through the construction period.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT:

a. Status of Environmental Impact Statement: The operation and maintenance of the Illinois Waterway for commercial navigation has been addressed in the Environmental Impact Statement entitled "Operation and Maintenance of the Cal-Sag Channel and the Chicago Sanitary and Ship Canal to the LaGrange Lock and Dam," which was filed with the Council on Environmental Quality on 1 December 1975. In regard to the proposed rehabilitation work, an Environmental Assessment will be coordinated in the second quarter of Fiscal Year 1986 to satisfy the requirements of the National Environmental Policy Act in accordance with the guidelines of the Council on Environmental Quality. If no significant impacts are identified, a Finding of No Significant Impact will be prepared and scheduled for signature by the District Commander in the second quarter of Fiscal Year 1986.

b. Compliance with Clean Water Act: The provisions of the Clean Water Act are scheduled to be met by a Section 404 (b)(1) Evaluation in the second quarter of Fiscal Year 1986, a Public Notice issued in the second quarter Fiscal Year 1986, a Certification from the State of Illinois in the second quarter Fiscal Year 1986, and the District Commander's signature on the Evaluation Report in the second quarter Fiscal Year 1986.

OTHER INFORMATION: Plans and Specifications for the first stage of construction are scheduled for approval in May 1986. The construction contract is scheduled for award in June 1986.

Overall project completion has been extended one year because additional time was required to resolve technical problems associated with the design of new gates to replace a section of the wicket dam. The Rock Island Field Office of the United States Department of the Interior, Fish and Wildlife Service, has recommended that in lieu of site specific Environmental Assessments for individual rehabilitation projects, a systemic Environmental Impact Statement be prepared encompassing all the proposed lock and dam projects on the Upper Mississippi River and Illinois Waterway. Their concern is that incorporating the latest technology in the safety and efficiency structural measures proposed will increase the system capacity. The Corps position is that the work included in the proposed rehabilitation does not or is not being taken to increase the navigation capacity of the Upper Mississippi River system. Further agency coordination is ongoing.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

**Division:** North Central
**District:** Rock Island

**Project:** Illinois Waterway, Peoria Lock and Dam, Illinois

| Item | Estimates Presented to Congress ($1,000) Original Baseline (1) | Cumulative Changes (2) | Last (3) | Incremental Change (4) | Current (5) |
|---|---|---|---|---|---|
| Federal Cost<br>(Price Level) | 16,300<br>(Oct 1984) | | 18,200 1/ | | 17,300 1/ 2/ |
| Reason for Change | | (1,900) 1/ | | (-900) 2/ | |
| a. Price Escalation | | 1,900 | | -900 | |
| b. Design Changes | | 0 | | 0 | |
| c. Additional Function Added Under General Authorization | | 0 | | 0 | |
| d. Authorized Modification | | 0 | | 0 | |
| e. Post-Contract Award and Other Estimating Adjustments | | 0 | | 0 | |
| f. Schedule Changes | | 0 | | 0 | |
| g. Sundry | | 0 | | 0 | |
| h. Real Estate | | 0 | | 0 | |

1/ Includes an allowance for estimated inflation through the construction period.

2/ Includes a decrease of $900 for adjustments in the estimated inflation allowance through the construction period.

REPORTS CONTROL SYMBOL: DAEN-CWB-13

| | |
|---|---|
| APPROPRIATION TITLE: OPERATION AND MAINTENANCE, GENERAL | CLASSIFICATION: NAVIGATION (LOCKS AND DAMS)<br>MAJOR REHABILITATION |

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM | PROJECT COST ESTIMATE | TOTAL TO 30 SEP 19 85 | CURRENT FY 19 86 | BUDGET FY 19 87 | BALANCE TO COMPLETE AFTER FY 19 87 |
|---|---|---|---|---|---|---|
| | (a) | (b) | (c) | (d) | (e) | (f) |
| 1 | DAMS | $12,500,000 | 0 | $130,000 | $1,510,000 | $10,860,000 |
| 2 | LOCKS | 2,840,000 | 0 | 250,000 | 2,000,000 | 590,000 |
| 3 | ENGINEERING AND DESIGN | 1,050,000 | 0 | 430,000 | 370,000 | 250,000 |
| 4 | SUPERVISION AND ADMINISTRATION | 910,000 | 0 | 90,000 | 220,000 | 600,000 |
| 5 | | | | | | |
| 6 | | | | | | |
| 7 | TOTAL APPLIED COST (Federal Funds Only) | 17,300,000 | 0 | 900,000 | 4,100,000 | 12,300,000 |
| 8 | Undistributed Costs (None) | | | | | |
| 9 | TOTAL PROJECT COST (Federal Funds Only) | 17,300,000 | 0 | 900,000 | 4,100,000 | 12,300,000 |
| 10 | Pending Adjustments (None) | | | | | |
| 11 | TOTAL COSTS (Federal Funds Only) | 17,300,000 | 0 | 900,000 | 4,100,000 | 12,300,000 |
| 12 | Undelivered Orders | | | | | |
| 13 | TOTAL OBLIGATIONS | | 0 | 900,000 | 4,100,000 | 12,300,000 |
| 14 | | | | | | |
| 15 | | | | | | |
| 16 | METHOD OF FINANCING | | | | | |
| 17 | FEDERAL FUNDS | | | | | |
| 18 | Allocations | | 0 | 900,000 | | |
| 19 | Unobligated Carryover from Prior Year | | | 0 | | |
| 20 | Total Funds Available for Obligations | | | 900,000 | | |
| 21 | Appropriations Required | | | | 4,100,000 | 12,300,000 |
| 22 | | | | | | |
| 23 | NON-FEDERAL FUNDS | | | | | |
| 24 | Cash Contributions | 0 | | | | |
| 25 | Other Costs | 0 | | | | |
| 26 | Lands & Damages | (0) | | | | |
| 27 | Relocations | (0) | | | | |
| 28 | Other | (0) | | | | |
| 29 | TOTAL NON-FEDERAL COSTS | 0 | | | | |
| 30 | | | | | | |
| 31 | | | | | | |
| 32 | | | | | | |
| 33 | | | | | | |

| | | | |
|---|---|---|---|
| EFFECTIVE DATE 1 JAN 86 | DIVISION NORTH CENTRAL<br>DISTRICT ROCK ISLAND | REGION UPPER MISSISSIPPI<br>BASIN SALT-SNY-ILLINOIS | PROJECT ILLINOIS WATERWAY, PEORIA LOCK AND DAM, ILLINOIS |

ENG FORM 1 SEP 78 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE.

APPROPRIATION TITLE: Operation & Maintenance General - Major Rehabilitation, Channels and Harbors (Navigation).

PROJECT: Duluth-Superior Harbor, MN-WI (Rehabilitation of the North and South piers of the Duluth Ship Canal).

LOCATION AND DESCRIPTION: Duluth-Superior Harbor, is located at the extreme western end of Lake Superior with the cities of Duluth, Minnesota and Superior, Wisconsin on the North and South sides, respectively. The authorized project provides for two entries into the harbor, the Duluth Ship Canal which is the northernmost entry and the Superior Entry which is located in the southern portion of the harbor. The project plan provides for rehabilitation of the North and South piers at the Duluth Ship Canal (Section M, N, N-1 and O).

AUTHORIZATION: The project was authorized under the River and Harbor Acts of 1896, 1902, 1907, 1908, 1916, 1919, 1927, 1930, 1952, 1960, and 1961.

BENEFIT TO COST RATIO: The current remaining benefit - remaining cost ratio is not applicable because monetary benefits have not been quantified.

SUMMARIZED FINANCIAL DATA:

| | | Accum. % of Est. Fed. Cost | STATUS: (1 Jan 1986) | PERCENT COMPLETE | COMPLETION SCHEDULE |
|---|---|---|---|---|---|
| Estimated Federal Cost | $11,700,000 | | Reconstruct North and South Piers (Sections M, N, N-1 & O) | 25 | Dec 1987 |
| Estimated Non-Federal Cost | 0 | | | | |
| Total Estimated Project Cost | $11,700,000 | | | | |
| Allocations to 30 September 1985 | $ 2,410,000[1] | | | | |
| Conference Allowance for FY 1986 | 6,200,000[1] | | | | |
| Allocation for FY 1986 | 4,200,000 | | | | |
| Allocation to Date | 6,610,000 | 56 | | | |
| Allocation Requested for FY 1987 | 3,100,000 | 83 | | | |
| Scheduled Balance to Complete after FY 1987 | 1,990,000 | | | | |
| Unscheduled Balance to Complete after FY 1987 | 0 | | | | |

[1] Difference represents a savings due to favorable bids and contract award.

Division: North Central District: Detroit Region: Great Lakes

JUSTIFICATION: Rehabilitation of the North and South piers is necessary to maintain a safe harbor entrance for commercial vessels to unload and load waterborne commerce. Although the piers sub-structure is in good shape a major concern is the overall pier stability. Preliminary analysis shows safety factors against overturning and sliding to be below acceptable levels. Additional scour on the channel side coupled with a severe storm could result in a failure. It should be noted that increased channel depths due to the scouring action of the passage of the largest vessels on the Great Lakes is to be expected. Vessels entering the channel between the piers must often do so at a high rate of speed to maintain steerage in these constricted areas when waves are high. Failure to rehabilitate the North and South piers would result in the eventual collapse of the piers, rendering the Duluth ship canal unuseable by commercial vessels. Also, near the western end of the ship canal is an aerial lift bridge over the canal parapet walls on Section O. If deterioration is allowed to continue until a structural collapse occurs on the North and South piers, the undermining of the bridge abutment foundations is possible due to additional soil erosion. The Duluth Ship Canal, an important asset to the Duluth-Superior Harbor, is a safe means of providing commercial vessel movement from Lake Superior into the harbor. It is a shorter shipping route to St. Louis Bay and the St. Louis River than if the ships were required to use the Superior Entry. The savings in time of the Duluth Ship Canal over the Superior Entry is seven tenths of one hour based upon distance traveled and the maximum allowable speed limit of 8 mph in the harbor. This savings in time results in a yearly benefit of $1,276,000 based upon operating cost of the different size vessels using the Duluth Ship Canal. Duluth-Superior Harbor is a vital link for the commercial and industrial business of the region and the Duluth Ship Canal is the major entrance and exit for shipping vessels. Waterborne commerce transported through the harbor has averaged approximately 37,200,000 ton annually during the 10-year period 1974-1983. Principal commodities carried consisted of iron ore and concentrates, coal and lignite, and wheat.

NON-FEDERAL COST: There are no non-Federal cost associated with this project.

STATUS OF LOCAL COOPERATION: No local cooperation was included in the authorization to construct the original project, and none will be required for the rehabilitation work.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $11,700,000 is a decrease of $5,500,000 over the latest estimate ($17,200,000 - October 1984) presented to Congress. This change includes decreases of $800,000 for adjustments in the estimated inflation allowance through the construction period, $3,050,000 based on more detailed designs and cost estimates, 1,520,000 based on bids received and contract award and $130,000 for Supervision and Administration based on a recent reanalysis of requirements.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH THE CLEAN WATER ACT: The environmental impact of proposed action did not constitute substantial changes that would significantly affect the quality of the human environment; therefore, the preparation of an Environmental Impact Statement was not required. However, an Environmental Assessment (EA) and Section 404 Evaluation were prepared in accordance with the National Environmental Policy Act of 1969 and Section 404 of the Clean Water Act of 1977. A Finding of No Significant Impact (FONSI) was issued on 11 May 1984.

The provisions of Section 404 of the Clean Water Act have been met by a Section 404 (b)(1) Evaluation completed in March 1984, a Public Notice issued on 2 April 1984, a Certification issued by the State of Minnesota on 18 July 1984, and the District Commander's signature on the GDM Report on 1 November 1984.

OTHER INFORMATION: None.

## HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

**Division:** North Central
District: Detroit

**Project:** Duluth-Superior Harbor, MN-WI

| Item | Original Baseline (1) | Cummulative Changes (2) | Last (3) | Incremental Change (4) | Current (5) |
|---|---|---|---|---|---|
| | | Estimates Presented to Congress ($1,000) | | | |
| Federal Cost (Price Level) | $11,100 (Oct 1983) | | 17,200 1/ | | $11,700 |
| Reason for Change: | | (6,100) 1/ | | (-5,500) 4/ | |
| a. Price Escalation | | 1,120 | | -800 | |
| b. Design Changes | | 4,755 | | -4,570 3/ | |
| c. Additional Function Added General Authorization | | | | | |
| d. Authorized Modification | | | | | |
| e. Post-Contract Award and Other Estimating Adjustments | | 225 | | -130 2/ | |
| f. Schedule Changes | | | | | |
| g. Sundry | | | | | |
| h. Real Estate | | | | | |

1/ Includes an allowance for estimated inflation through the construction period.

2/ Reanalysis of requirements for Supervision and Administration.

3/ Decrease based on more detailed designs and cost estimate based on a recent reanalysis of requirements (-3,050), and bids received and contract award (-1,520).

4/ Includes negative $800.0 adjustment in estimated inflation allowance.

REPORTS CONTROL SYMBOL:

APPROPRIATION TITLE: CONSTRUCTION GENERAL
OPERATION & MAINTENANCE GENERAL

CLASSIFICATION:
MAJOR REHABILITATION (CHANNELS AND HARBORS)

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM (a) | PROJECT COST ESTIMATE (b) | TOTAL TO 30 SEP 19 85 (c) | CURRENT FY 19 86 (d) | BUDGET FY 19 87 (e) | BALANCE TO COMPLETE AFTER FY 19 87 (f) |
|---|---|---|---|---|---|---|
| 1 | BREAKWATERS | 10,930,000 | 2,261,500 | 3,598,500 | 2,815,000 | 1,855,000 |
| 2 | ENGINEERING AND DESIGN | 95,000 | 4,600 | 40,400 | 35,000 | 15,000 |
| 3 | SUPERVISION AND ADMINISTRATION | 675,000 | 25,600 | 279,400 | 250,000 | 120,000 |
| 4 | | | | | | |
| 5 | TOTAL APPLIED COST (Fed Funds Only) | 11,700,000 | 2,291,700 | 4,318,300 | 3,100,000 | 1,990,000 |
| 6 | Undistributed Cost (None) | | | | | |
| 7 | TOTAL PROJECT COST (Fed Funds Only) | 11,700,000 | 2,291,700 | 4,318,300 | 3,100,000 | 1,990,000 |
| 8 | Pending Adjustment (None) | | | | | |
| 9 | TOTAL COST (Fed Funds Only) | 11,700,000 | 2,291,700 | 4,318,300 | 3,100,000 | 1,990,000 |
| 10 | Undelivered Orders | | 90,000 | -90,000 | | |
| 11 | TOTAL OBLIGATIONS | | 2,381,700 | 4,228,300 | 3,100,000 | 1,990,000 |
| 12 | | | | | | |
| 13 | | | | | | |
| 14 | METHOD OF FINANCING | | | | | |
| 15 | FEDERAL FUNDS | | | | | |
| 16 | ALLOCATIONS | | 2,410,000 | 4,200,000 | | |
| 17 | UNOBLIGATED CARRYOVER FROM PRIOR YEAR | | | 28,300 | | |
| 18 | TOTAL FUNDS AVAILABLE FOR OBLIGATION | | 2,410,000 | 4,228,300 | | |
| 19 | APPROPRIATION REQUIRED | | | | 3,100,000 | 1,990,000 |
| 20 | | | | | | |
| 21 | | | | | | |
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|---|---|---|---|
| EFFECTIVE DATE<br>1 Jan 86 | DIVISION NORTH CENTRAL<br>DISTRICT DETROIT | REGION GREAT LAKES<br>BASIN LAKE SUPERIOR | PROJECT<br>DULUTH-SUPERIOR HARBOR, MN - WI |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE.

APPROPRIATION TITLE: Operations and Maintenance, General - Major Rehabilitation - Locks and Dams (Navigation)

PROJECT: Mississippi River, between Missouri River and Minneapolis, Minnesota - Lock and Dam No. 20, Missouri (Rehabilitation of Lock and Dam) (Continuing)

LOCATION AND DESCRIPTION: The project is located at Mississippi River Mile 343.2, just upstream of Canton, Missouri. The facility is a unit of the Inland Waterway System of the Upper Mississippi River Basin and is one of 29 such facilities between Minneapolis, Minnesota, and St. Louis, Missouri. The structure was placed in operation in 1936. The lock chamber is 110 feet wide by 600 feet long. A 360-foot by 110-foot emergency auxiliary lock only partially constructed is located adjacent to the main lock. The dam is 2,294 feet long and consists of a roller gate section with 3 gates and a tainter gate section with 40 gates. Significant features of the proposed rehabilitation include resurfacing deteriorated concrete areas on the lock walls and dam piers; replacing lock gate and lock valve operating machinery; replacing electrical equipment; install vertical lift gate across the emergency auxiliary lock bay; placing additional rock fill and riprap for increased scour protection downstream of the dam structure; repairing and painting the main and auxiliary lock gates, lock valves, roller gates, tainter gates, and service bridge crossing the dam; and installing individual tainter gate operating machinery on all gates; and constructing a guard cell downstream of the intermediate lock wall.

AUTHORIZATION: River and Harbor Act of 1930.

BENEFIT-COST RATIO: The remaining benefit-remaining cost ratio is not applicable because monetary benefits have not been quantified.

| SUMMARIZED FINANCIAL DATA | | Accum. % of Est. Fed. Cost | STATUS: (1 January 1986) | PERCENT COMPLETE | COMPLETION SCHEDULE |
|---|---|---|---|---|---|
| Estimated Federal Cost | $30,500,000 | | Project not yet started | | Jul 1990 |
| Estimated Non-Federal Cost | 0 | | | | |
| Total Estimated Project Cost | $30,500,000 | | | | |
| Allocations to 30 September 1985 | 0 | | | | |
| Conference Allowance for FY 1986 | 900,000 | | | | |
| Allocation for FY 1986 | 1,700,000 1/ | | | | |
| Allocations to Date | 1,700,000 | 6 | | | |
| Allocation Requested for FY 1987 | 6,500,000 | 27 | | | |
| Scheduled Balance to Complete after FY 1987 | 22,300,000 | | | | |
| Unscheduled Balance to Complete after FY 1987 | 0 | | | | |

1/ Reflects $800,000 transfer to the project.

Division: North Central District: Rock Island Region: Upper Mississippi
Lock and Dam No. 20, Missouri

JUSTIFICATION: Many features of the facility are in an advanced state of deterioration and operation of the tainter gates with the traveling hoist is costly and a safety hazard. The vertical monolith joints in the lock walls are deteriorated and badly abraded as a result of barges scraping the walls; protection angles at 3 of the 6 ladder recesses and all the miter gate corners have been stripped off by barges; and concrete in the upper portion of 12 tainter gate piers is in very poor condition. The main lock miter gate machinery, the lock valve machinery and electrical equipment is in poor condition due to over 49 years of use; a vertical lift gate is needed across the emergency auxiliary lock bay to provide for a backup method of restoring pool and also to allow ice and debris passage; structural steel components consisting of lock gates, lock tainter valves, service bridge across the dam, and the dams roller and tainter gates are in varying degrees of disrepair; and scour holes exist downstream of the dam. Rehabilitation is essential to extend the useful life of this lock and dam. Delaying the work will risk interruption to navigation due to frequent shutdowns for major repairs and will result in increased total maintenance cost to the Government.

Traffic through the lock for the past five years is as follows:

| Year | Commercial Tonnage | Number of Lockages Commercial Vessels |
|---|---|---|
| 1980 | 29,695,000 | 5,589 |
| 1981 | 31,572,000 | 5,831 |
| 1982 | 28,694,000 | 5,154 |
| 1983 | 35,002,000 | 6,139 |
| 1984 | 32,961,000 | 5,268 |

FISCAL YEAR 1987: The requested amount will be applied as follows:

| | |
|---|---|
| Initiate: Dam Scour Protection | $1,000,000 |
| Continue: Lock Rehabilitation | 4,600,000 |
| Engineering and Design | 500,000 |
| Supervision and Administration | 400,000 |
| Total | $6,500,000 |

Funds requested are based on an economical rate of construction with project completion scheduled for July 1990.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $30,500,000 is an increase of $15,300,000 over the latest estimate ($15,200,000) presented to Congress. This change includes increases of $800,000 for adjustments in the estimated inflation allowance through the construction period, $13,090,000 based on more detailed planning of construction, and $1,410,000 for Engineering and Design and Supervision and Administration based on a recent reanalysis of requirements.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT:

a. Status of Environmental Impact Statement: The operation of the Upper Mississippi River for commercial navigation has been addressed in the Environmental Impact Statement entitled "Operation and Maintenance of the Upper Mississippi River Nine-Foot Navigation Channel," which was filed with Council on Environmental Quality in July 1974. In regard to the proposed rehabilitation work, an Environmental Assessment will be coordinated in the second quarter of Fiscal Year 1986 to satisfy the requirements of the National Environmental Policy Act in accordance with the guidelines of the Council on Environmental Quality. If no significant impacts are identified, a Finding of No Significant Impact (FONSI) will be prepared and scheduled for signature by the District Commander in the third quarter of Fiscal Year 1986.

b. Compliance with Clean Water Act: The provisions of the Clean Water Act are scheduled to be met by a Section 404 (b)(1) Evaluation in the second quarter of Fiscal Year 1986, a Public Notice issued in the second quarter Fiscal Year 1986, a Certification from the States of Illinois and Missouri in the second quarter Fiscal Year 1986, and the District Commander's signature on the Evaluation Report in the third quarter Fiscal Year 1986.

OTHER INFORMATION: Plans and Specifications for the first stage of construction is scheduled for approval in May 1986. Initiation of construction is scheduled for June 1986. The Rock Island Field Office of the United States Department of the Interior, Fish and Wildlife Service, has recommended that in lieu of site specific Environmental Assessments for individual rehabilitation projects, a systemic Environmental Impact Statement be prepared encompassing all the proposed lock and dam projects on the Upper Mississippi River and Illinois Waterway. Their concern is that incorporating the latest technology in the safety and efficiency structural measures proposed will increase the system capacity. The Corps position is that the work included in the proposed rehabilitation does not or is not being taken to increase the navigation capacity of the Upper Mississippi River system. Further agency coordination is ongoing.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: North Central
District: Rock Island

Project: Mississippi River, Canton Missouri, Lock and Dam No. 20

| | Estimates Presented to Congress ($000) | | | | |
|---|---|---|---|---|---|
| | Original Baseline (1) | Cumulative Changes (2) | Last (3) | Incremental Change (4) | Current (5) |
| Federal Cost (Price Level) | 13,700 (Oct 1984) | | 15,200 1/ | | 30,500 1/ 2/ |
| Reason for Change | | (1,500) 1/ | | (15,300) 2/ | |
| a. Price Escalation | | 1,500 | | 800 | |
| b. Design Changes | | 0 | | 0 | |
| c. Additional Function Added Under General Authorization | | 0<br>0 | | 0 | |
| d. Authorized Modification | | 0 | | 0 | |
| e. Post-Contract Award and Other Estimating Adjustments | | 0 | | 14,500 3/ | |
| f. Schedule Changes | | 0 | | 0 | |
| g. Sundry | | 0 | | 0 | |
| h. Real Estate | | 0 | | 0 | |

1/ Includes an allowance for estimated inflation through the construction period.

2/ Includes an increase of $800 for adjustments in the estimated inflation allowance through the construction period.

3/ Includes increases of $13,090 based on more detailed planning of construction and $1,410 for Engineering and Design and Supervision and Administration based on a recent reanalysis of requirements.

REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: ~~CONSTRUCTION GENERAL~~ OPERATION AND MAINTENANCE, GENERAL

CLASSIFICATION: NAVIGATION (LOCKS & DAMS) MAJOR REHABILITATION

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM (a) | PROJECT COST ESTIMATE (b) | TOTAL TO 30 SEP 19 85 (c) | CURRENT FY 19 86 (d) | BUDGET FY 19 87 (e) | BALANCE TO COMPLETE AFTER FY 19 87 (f) |
|---|---|---|---|---|---|---|
| 1 | DAMS | $21,500,000 | 0 | $ 0 | $1,000,000 | $20,500,000 |
| 2 | LOCKS | 6,000,000 | 0 | 1,130,000 | 4,600,000 | 270,000 |
| 3 | ENGINEERING AND DESIGN | 1,300,000 | 0 | 500,000 | 500,000 | 300,000 |
| 4 | SUPERVISION AND ADMINISTRATION | 1,700,000 | 0 | 70,000 | 400,000 | 1,230,000 |
| 5 | | | | | | |
| 6 | | | | | | |
| 7 | TOTAL APPLIED COSTS (Federal Funds Only) | 30,500,000 | 0 | 1,700,000 | 6,500,000 | 22,300,000 |
| 8 | Undistributed Costs (None) | | | | | |
| 9 | TOTAL PROJECT COSTS (Federal Funds Only) | 30,500,000 | 0 | 1,700,000 | 6,500,000 | 22,300,000 |
| 10 | Pending Adjustments (None) | | | | | |
| 11 | TOTAL COSTS (Federal Funds Only) | 30,500,000 | 0 | 1,700,000 | 6,500,000 | 22,300,000 |
| 12 | Undelivered Orders | | | | | |
| 13 | TOTAL OBLIGATIONS | | 0 | 1,700,000 | 6,500,000 | 22,300,000 |
| 14 | | | | | | |
| 15 | | | | | | |
| 16 | METHOD OF FINANCING | | | | | |
| 17 | FEDERAL FUNDS | | | | | |
| 18 | Allocations | | 0 | 1,700,000 | | |
| 19 | Unobligated Carryover from Prior Year | | | 0 | | |
| 20 | Total Funds Available for Obligation | | | 1,700,000 1/ | | |
| 21 | Appropriations Required | | | | 6,500,000 | 22,300,000 |
| 22 | | | | | | |
| 23 | NON-FEDERAL COSTS | | | | | |
| 24 | Cash Contributions | 0 | | | | |
| 25 | Other | 0 | | | | |
| 26 | Land & Damages | (0) | | | | |
| 27 | Relocations | (0) | | | | |
| 28 | Other | (0) | | | | |
| 29 | TOTAL NON-FEDERAL COSTS | 0 | | | | |
| 30 | | | | | | |
| 31 | 1/ Reflects $800,000 transfer to the | | | | | |
| 32 | project. | | | | | |
| 33 | | | | | | |

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|---|---|---|---|
| EFFECTIVE DATE 1 JAN 86 | DIVISION NORTH CENTRAL<br>DISTRICT ROCK ISLAND | REGION UPPER MISSISSIPPI<br>BASIN ROCK-MISS-DES MOINES | PROJECT MISSISSIPPI RIVER BETWEEN MISSOURI RIVER & MINNEAPOLIS, MN., LOCK AND DAM NO. 20, MISSOURI |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE.

Mr. BEVILL. I have several questions I will submit and ask that you answer on the record, and I recognize Mr. Myers at this time.

[The questions and answers follow:]

### MOOSE AND BLACK RIVERS, NEW YORK

Mr. BEVILL. Describe the Moose and Black Rivers, New York study which is one of the new study starts in the FY 1987 budget.

General PRATT. Sir, the Black River, including its major tributary, the Moose River, is located in north-central New York State and has a total drainage of 1,916 square miles. The flood of record occurred in December 1984 and, based on newspaper reports, caused over $1.3 million in damages. This study will consider needs for flood control, streambank erosion, hydropower, water supply, navigation, watershed management, recreation, and other water related purposes. Primary local interest has been in a multipurpose reservoir at Hawkinsville to provide flood control, water supply recreation, and hydropower.

### SAGINAW RIVER, MICHIGAN

Mr. BEVILL. Who are the non-Federal users to be trained on the Saginaw River Basin model referred to in the justifications?

General PRATT. Mr. Chairman, representatives from the specific non-Federal agency that will operate and maintain the model will have to be trained. This agency has not yet been identified. To date, interest has been expressed by the University of Michigan at Flint, Michigan State University, Saginaw Valley State College, and the Engineering-Water Management Division of the Michigan Department of Natural Resources. The strongest interest for using the information and analyses generated by the model has been expressed by Saginaw County, Bay County, Genesee County, and Oakland County. Representatives from these using agencies will also require training. By May 1986, a committee composed of representatives from all interested basin counties, state agencies, and basin planning commissions will recommend an entity to operate and maintain the model.

Mr. BEVILL. Is there a charge made for this service?

General PRATT. Sir, House Report 99-195, which accompanied the FY 1986 Energy and Water Development Appropriation Act, stated that $60,000 is provided to transfer data to an accessible format and to train personnel in the use of the computer model. These funds will be used to cover salaries and expenses of Federal employees to provide the required training. No charge will be made to the trainees.

### MINNESOTA RIVER VALLEY, MINNESOTA

Mr. BEVILL. Describe how the hydrologic-hydraulic-economic model is being used in reference to the Minnesota River Valley, Minnesota study.

General PRATT. Sir, Hydrologic models were developed by the Soil Conservation Service, hydraulic models were prepared by the Corps, and economic models were developed by the Soil Conservation service for the tributaries and main stems in each of the 5 sub-basins in this portion of the Minnesota River Valley study. These models are then merged to determine the areas that will flood and damages that will occur in each of the sub-basins under present conditions of development. Flood damage reduction alternatives are then entered into each of the sub-basin models to determine their effectiveness. In addition, the State of Minnesota and the local watershed management districts are using the maps of the flooded areas to implement programs for land use regulation, flood insurance, and flood plain management.

### BUFFALO METROPOLITAN AREA

Mr. BEVILL. I note that $300,000 is budgeted for the Buffalo Metropolitan Area study in FY 1987. Why are no funds being allocated to the study in the current fiscal year?

General PRATT. Mr. Bevill, FY 1987 was the first year after the recent flooding we could budget for funds to resume the Buffalo Metropolitan Area study.

### SANDUSKY RIVER, OHIO

Mr. BEVILL. You are resuming the Sandusky River, Ohio study in FY 1987. Why are no funds being allocated to the study in FY 1986?

General PRATT. Mr. Chairman, budgetary constraints and higher priority studies precluded funding the Sandusky River study until FY 1987.

### LAKE ONTARIO–ST. LAWRENCE RIVER SHORELINE PROTECTION STUDY

Mr. **Bevill.** What type of cost sharing alternatives for protection of private property are being looked at in connection with the Lake Ontario–St. Lawrence River Shoreline Protection study?

General **Pratt.** Sir, protection of private property along the Great Lakes Shoreline from damages due to erosion has always been outside of the Federal interest. The cost sharing policies agreed to by the Administration and the Senate Majority Leadership have reconfirmed this position. On the other hand, for many years there has been a Federal interest in the protection of private property along the shoreline from flooding due to waves caused by storms. The principal examples of projects that provide this type of protection are the numerous hurricane protection projects along the Atlantic and Gulf of Mexico coastlines. This approach has been seldom used in the Great Lakes. The cost sharing agreement clearly sets the Federal interest in these projects at 65 percent.

Since protection of private property from erosion has no Federal interest, we have assumed this is the purpose to be analyzed for cost sharing alternatives. Before we can develop other cost sharing alternatives, we must determine if there are any economically viable projects and if these projects protect more than one beneficiary. If both of these conditions pertain, we will examine the effect of cost sharing between 100 percent non-Federal and 65 percent Federal—35 percent non-Federal; the cost sharing for erosion protection of public lands.

### DIVERSION OF LAKE MICHIGAN WATER AT CHICAGO, ILLINOIS

Mr. Bevill. No funds are being allocated in FY 1986 to the study of the Diversion of Lake Michigan Water at Chicago and a final report will be prepared in FY 1987. What recommendations will likely be made?

General **Pratt.** Sir, based on the work completed to date, we have concluded that a maximum diversion rate of 10,000 cubic feet per second is not economically feasible. However, it appears that a diversion rate somewhere between the existing rate of 3,200 cubic feet per second and the rate of 6,600 cubic feet per second has a potential to optimize accruing to the Illinois Waterway. Evaluations and analyses scheduled for FY 1987 will determine, more specifically, the increased diversion rates that would be feasible under varying sets of conditions.

### LORAIN HARBOR, OHIO

Mr. **Bevill.** Last year Congress appropriated $1,880,000 for construction of the Lorain Harbor, Ohio, Section 107 project. What is the status of that work?

General **Pratt.** Mr. Chairman, preparation of Plans and Specifications, presently underway, will be completed this Spring. Assuming approval for construction, a construction contract award is presently scheduled for the Spring of 1986.

Mr. **Bevill.** What is the relationship between the 107 project and the Lorain Harbor project described in the justifications?

General **Pratt.** Sir, there is no relationship between the Lorain Harbor Section 107 project and the Lorain Harbor project for Commercial Navigation.

The Lorain Section 107 project is located in the outer harbor next to the Shore of Lake Erie. The recommended plan proposes construction of a 325-foot detached breakwater and a 800-foot long rubblemound breakwater which would provide an all-weather recreational harbor.

The Lorain Harbor project for Commercial Navigation is located in the Black River. This project consists of three bank cuts to widen the channel for efficient commercial navigation of the river by 767-foot vessels.

### OTTAWA, OHIO

Mr. **Bevill.** I note you are resuming planning of the Ottawa, Ohio project. When was the project last funded?

General **Pratt.** Sir, funds were received for the Ottawa, Ohio project in FY 1985 to proceed with a reevaluation of the authorized project.

### MAUMEE BAY STATE PARK

Mr. **Bevill.** The FY 1985 Supplemental Appropriations Bill directed the initiation of continuation of planning and engineering studies at Maumee Bay State Park. What is the status of the study?

General **Pratt.** Sir, the FY 1985 Supplemental Appropriations Act directed that the $200,000 included in the regular FY 1985 Appropriations Act be provided to initiate continuation of planning and engineering at Maumee Bay State Park. An affirmation report is scheduled for approval in the Spring of 1986. Work on the General Design Memorandum will be initiated in the Summer of 1986.

### SOUTH QUINCY DRAINAGE AND LEVEE DISTRICT, ILLINOIS

Mr. **Bevill**. Describe the South Quincy Drainage and Levee District, Illinois, project for which initiation funds are requested contingent upon authorization.

General **Pratt**. The proposed plan of improvement would raise the existing level of protection from a 50-year frequency to a 500-year frquency. Increasing the level of protection will be accomplished by raising 8.8 miles of existing levees approximately 3.5 feet in height and adding 0.4 miles of levees and floodwalls. Additional features include raising and resurfacing existing road ramps, a railroad closure structure, and modification of the discharge line at the existing pumping plant.

### SOUTH FORK ZUMBRO RIVER AT ROCHESTER, MINNESOTA

Mr. **Bevill**. In reference to the South Fork Zumbro River at Rochester, Minnesota, the justification indicates that the Corps project and seven Soil Conservation Service projects would provide flood control for the area. I understand the 1987 budget has eliminated the Watershed Program of Soil Conservation Service. Would the Corps project be viable if the Soil Conservation Service structures were not constructed?

General **Pratt**. Mr. Bevill, the benefits from the Corps of Engineers project at Rochester, Minnesota, are based on the assumption that the Soil Conservation Service project will be constructed first. The combination of the Soil Conservation Service and Corps projects would provide protection to this urban area from the 200-year flood. The Corps' project would still be viable without the Soil Conservation Service reservoirs, however, some areas of Rochester will have a much lower level of protection, far less than is desirable for urban areas.

### UPPER MISSISSIPPI RIVER SYSTEM ENVIRONMENTAL MANAGEMENT PROGRAM

Mr. **Bevill**. Briefly outline how the Upper Mississippi River System Environmental Management Program will be implemented. How will the funds requested in FY 1987 be used and how will the non-Federal share be determined?

General **Pratt**. Mr. Chairman, the "General Plan" for implementation of the Upper Mississippi River System Environmental Management Program was forwarded to higher authority, by my office, in January 1986. The U.S. Fish and Wildlife Service, Region 3, and the five affected States, namely, Illinois, Iowa, Minnesota, Missouri, and Wisconsin participated in the preparation of the plan through the Upper Mississippi River Basin Association. The General Plan identifies five elements to be undertaken in the program. First, the Habitat Rehabilitation and Enhancement Projects proposed by the States, the U.S. Fish and Wildlife Service, and the Corps of Engineers, will be cost-shared in accordance with the Administration and Senate Majority Leadership agreement. This agreement provides for 100 percent Federal funding of enhancement projects having benefits that are determined to be national, 75 percent Federal funding for enhancement projects with multistate benefits, and 66⅔ percent Federal funding for such projects that benefit a single state. The States and the U.S. Fish and Wildlife Service are participating in selecting, prioritizing, and designing these projects. Second, the Long-Term Resource Monitoring would be implemented under the operational leadership of the U.S. Fish and Wildlife Service with funds transferred by and ultimate responsibility residing with the Corps of Engineers. A draft Memorandum of Agreement is under review at the Washington levels of the Corps and the U.S. Fish and Wildlife Service. Funding is proposed to be 100 percent Federal. A Steering Committee would be formed to include participation by the States. The Computerized Inventory and Analysis will be implemented as a component of Long-Term Resource Monitoring. Third, the Recreation Projects will be proposed, selected, and designed with the participation of the States and the concurrence of the U.S. Fish and Wildlife Service. Cost sharing will be 50 percent Federal/50 percent non-Federal. Fourth, the Recreation Economics study will be undertaken with full participation of the States and the U.S. Fish and Wildlife Service. The study will define the impact of changes in the environment on recreation and the value that changes in recreational participation have in terms of dollars flowing through the local and regional economies and National Economic Development benefits to recreational users. Proposed funding would be 100 percent Federal. And, finally, the Navigation Traffic Monitoring would be conducted

APPROPRIATION TITLE: Operation and Maintenance General - Major Rehabilitation, Channels and Harbors (Navigation).

PROJECT: Milwaukee Harbor, Wisconsin (Rehabilitation of the North Breakwater and North Entrance Pier).

LOCATION AND DESCRIPTION: Milwaukee Harbor is situated on the western shore of Lake Michigan, 85 miles North of Chicago, Illinois and 85 miles West of Grand Haven, Michigan. The project provides for rehabilitation of 6,280 linear feet of the North Breakwater (Section B', B'-1, B'-3, C-1, C and E) and 1,656 linear feet of the North Entrance Pier (Section F, G, H and I).

AUTHORIZATION: The project was authorized under the River and Harbor Act of 1852, 1883, 1907, 1922, 1935, 1945, 1960, and 1962.

BENEFIT TO COST RATIO: The remaining benefit - remaining cost ratio is not applicable because monetary benefits have not been quantified.

SUMMARIZED FINANCIAL DATA:

| | | Accum. % of Est. Fed. Cost |
|---|---|---|
| Estimated Federal Cost | $12,800,000 | |
| Estimated Non-Federal Cost | 0 | |
| Total Estimated Project Cost | $12,800,000 | |
| Allocations to 30 September 1985 | $ 2,010,000 | |
| Conference Allowance for FY 1986 | $ 4,500,000 | |
| Allocation for FY 1986 | 3,600,000 | |
| Allocation to Date | 5,610,000 | 44 |
| Allocation Requested for FY 1987 | 4,500,000 | 79 |
| Scheduled Balance to Complete after FY 1987 | 2,690,000 | |
| Unscheduled Balance to Complete after FY 1987 | 0 | |

| STATUS: (1 Jan 1986) | PERCENT COMPLETE | COMPLETION SCHEDULE |
|---|---|---|
| N. Breakwater (B'-1, B'-3 & E) and N. Entrance Pier (F,G,H,& I) | 41 | Nov .986 |
| N. Breakwater (B', C-1 & C) | 0 | Nov 1987 |
| Entire Project | 41 | Nov 1987 |

Division: District: Detroit Region: Great Lakes

JUSTIFICATION: Because of the advanced age of the North entrance pier, surface spalling and crib settlement are progressing at such an extreme rate that imminent failure is expected if immediate corrective (rehabilitation) measures are not undertaken. Collapse of the crib structures would inhibit navigation of the entrance channel creating an unsafe and potentially dangerous condition. The condition of the existing North breakwater is such that continued settlement and attendant instability will lead to eventual failure of the internal crib framework of the structure. During severe weather, the outer harbor (the harbor of refuge) would become unuseable and unsafe to navigation, because of wave action. Consequently, rehabilitation of the North Breakwater and North Entrance Pier is required to maintain the integrity of the harbor structures and comply with the original Congressional authorization. Rehabilitation of the navigation structures would maintain a safe harbor for pleasure craft and a safe shipping channel linking the outer harbor to the Kinnickinnic and Milwaukee Rivers where a major portion of the existing waterborne commerce occurs. Continuous safe vessel operation into Milwaukee Harbor is essential in maintaining the economic viability of the region because the harbor services a variety of commodities in amounts for which there are no viable transportation alternatives. Waterborne commerce transported through the harbor has averaged approximately 3,700,000 tons annually during the 10 year period 1974-1983, while passenger service for the same period has averaged 110,000 passengers per year. Principal commodities carried consists of coal and lignite, corn, building cement and Non-metallic Minerals. The Port of Milwaukee has estimated in a preliminary survey that 27 companies are involved in the movement of waterborne commerce in the area. Should the harbor be allowed to deteriorate until non-functional, unemployment could exceed 1,240, loss in payroll could approximate $26 million, and the loss of sales revenue to the greater Milwaukee area could approach $372 million annually. The harbor is an essential component of the Milwaukee area economy.

NON-FEDERAL COST: There are no non-Federal costs associated with this project.

STATUS OF LOCAL COOPERATION: No local cooperation was included in the authorization to construct the original project, and none will be required for the rehabilitation work.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $12,800,000 is a decrease of $1,300,000 from the latest estimate ($14,100,000 - October 1984) presented to Congress. This change includes decreases of $200,000 for adjustments in the estimated inflation allowance through the construction period and $1,220,000 based on bids received and contract award. The decrease was partially offset by an increase of $80,000 for Engineering and Design, $28,000 for Supervision and Administration based on a recent reanalysis of requirements and $12,000 for additional Lands and Damages based on a recent real estate appraisal.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH THE CLEAN WATER ACT: The environmental impacts of the proposed action did not constitute substantial changes that would significantly affect the quality of the human environment; therefore, the preparation of an Environmental Impact Statement was not required. However, an Environmental Assessment (EA) and Section 404 Evaluation was prepared in accordance with the National Environmental Policy Act of 1969 and Section 404 of the Clean Water Act of 1977. A Finding of No Significant Impact (FONSI) was issued on 29 March 1985.

The provisions of Section 404 of the Clean Water Act were met by a Section 404 (b) (1) Evaluation completed in July 1984, a Public Notice issued on 29 November 1984, a Certification from the State of Wisconsin on 8 February 1985, and the District Commander's signature on the 404 Evaluation Report on 29 March 1985.

OTHER INFORMATION: None.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: North Central
District: Detroit

Project: Milwaukee Harbor, Michigan

Estimates Presented to Congress ($1,000)

| Item | Original Baseline (1) | Cumulative Changes (2) | Last (3) | Incremental Change (4) | Current (5) |
|---|---|---|---|---|---|
| Federal<br>(Price Level) | $13,200<br>(Oct 1983) | | $14,100 1/ | | $12,800 1/ |
| Reason for Change: | | (900) 1/ | | ( -1300) | |
| a. Price Escalation | | 920 | | - 200 | |
| b. Design Changes | | | | -1220 3/ | |
| c. Additional Function Added General Authorization | | | | | |
| d. Authorized Modification | | | | | |
| e. Post-Contract Award and Other Estimating Adjustments | | -20 | | -108 2/ | |
| f. Schedule Changes | | | | | |
| g. Sundry | | | | | |
| h. Real Estate | | | | 12 4/ | |

1/ Includes an allowance for estimated inflation through the construction period.

2/ Reanalysis of requirements for Engineering and Design (80) and Supervision and Administration (28).

3/ Decrease based on bids received and contract award.

4/ Additional Lands and Damages based on recent real estate appraisal.

REPORTS CONTROL SYMBOL:

| | |
|---|---|
| **APPROPRIATION TITLE:** CONSTRUCTION GENERAL<br>OPERATION & MAINTENANCE GENERAL | **CLASSIFICATION:**<br>MAJOR REHABILITATION (CHANNELS AND HARBORS) |

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM (a) | PROJECT COST ESTIMATE (b) | TOTAL TO 30 SEP 19 85 (c) | CURRENT FY 1986 (d) | BUDGET FY 19 87 (e) | BALANCE TO COMPLETE AFTER FY 19 87 (f) |
|---|---|---|---|---|---|---|
| 1 | LANDS AND DAMAGES | 12,000 | | 12,000 | | |
| 2 | BREAKWATERS | 11,950,000 | 1,915,000 | 3,375,000 | 4,100,000 | 2,560,000 |
| 3 | ENGINEERING AND DESIGN | 150,000 | - | 35,000 | 100,000 | 15,000 |
| 4 | SUPERVISION AND ADMINISTRATION | 688,000 | 26,000 | 247,000 | 300,000 | 115,000 |
| 5 | | | | | | |
| 6 | TOTAL APPLIED COST (Fed Funds Only) | 12,800,000 | 1,941,000 | 3,669,000 | 4,500,000 | 2,690,000 |
| 7 | Undistributed Cost (None) | | | | | |
| 8 | TOTAL PROJECT COST (Fed Funds Only) | 12,800,000 | 1,941,000 | 3,669,000 | 4,500,000 | 2,690,000 |
| 9 | Undelivered Orders | | 62,000 | -62,000 | | |
| 10 | TOTAL OBLIGATIONS | | 2,003,000 | 3,607,000 | 4,500,000 | 2,690,000 |
| 11 | | | | | | |
| 12 | | | | | | |
| 13 | METHOD OF FINANCING | | | | | |
| 14 | FEDERAL FUNDS | | | | | |
| 15 | ALLOCATIONS | | 2,010,000 | 3,600,000 | | |
| 16 | UNOBLIGATED CARRYOVER FROM PRIOR YEAR | | - | -7,000 | | |
| 17 | TOTAL FUNDS AVAILABLE FOR OBLIGATION | | 2,010,000 | 3,607,000 | | |
| 18 | | | | | 4,500,000 | 2,690,000 |
| 19 | | | | | | |
| 20 | | | | | | |
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| | | | |
|---|---|---|---|
| EFFECTIVE DATE<br>1 Jan 86 | DIVISION NORTH CENTRAL<br>DISTRICT DETROIT | REGION GREAT LAKES<br>BASIN N.W. LAKE MICHIGAN | PROJECT<br>MILWAUKEE HARBOR, WI |

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by the Corps of Engineers and coordinated with the States and Federal and non-Federal interests at 100 percent Federal expense.

The FY 1987 funds requested will be applied in the following manner; Program Management $50,000; Habitat Projects $500,000; Long Term Resource Monitoring $250,000; and finally $200,000 will be applied on the recreation projects.

### CLEVELAND HARBOR, OHIO

Mr. **Bevill**. The Conference Report accompanying the FY 1985 Supplemental Appropriations Bill details specific items to be included as part of the Cleveland Harbor, Ohio project. Are the items addressed in the Report being implemented as part of the overall project?

General **Pratt**. Sir, two specific projects were identified in the Conference Report you referred to: deepening the East Entrance and East Basin for commercial navigation; and repairs to Pier 34 and approach channels and necessary protective structures for mooring basins for recreational vessels. For the commercial navigation project, we are completing the Plans and Specifications and negotiating the Local Cooperation Agreement in preparation for proceeding into construction this Summer. For the Pier 34 project, we are presently conducting a Formulation Study to determine the economic justification, environmental impact, and Federal interest. This study is scheduled to be completed in September 1986. Detailed design and construction of the Pier 34 work are not scheduled pending the results of the Formulation Study.

### AMES LAKE, IOWA

Mr. **Bevill**. Congressman Neal Smith of Iowa is vitally interested in the Ames Lake reevaluation as well as the Des Moines Recreational River and Greenbelt. What is the status of each and how will the funds be allocated in FY 1986 and FY 1987 be utilized?

General **Pratt**. Mr. Chairman, The Ames Lake project, as authorized, is not currently supported by local interests. Reevaluation studies are underway to develop alternatives acceptable to local interests. The FY 1986 funds will complete the preliminary reevaluation Report. In FY 1987 we will complete the General Reevaluation Report and initiate the General Design Memorandum.

### DES MOINES RECREATIONAL RIVER AND GREENBELT, IOWA

With respect to the Des Moines Recreational River and Greenbelt project, initial funding of $15,000 was received in FY 1985. An organizational meeting was held on October 11, 1985, to discuss the objectives of the authorizing legislation, the initial Plan for Engineering and Design, organization and function of the Advisory Committee, and procedures which the Corps and other agencies had to follow. A second organizational meeting was held on December 6, 1985, during which rules of procedures were adopted and committee officials were elected. The final Plan for Engineering and Design was completed and sent to the Office of the Chief of Engineers in January 1986. The most recent Advisory Committee meeting was held on February 21, 1986, during which the General Design Memorandum study schedule was discussed, future public workshops were planned, and a list of existing Corps projects within the Greenbelt area were discussed. Various subcommittee meetings have been held over this period of time. Completion of the final General Design Memorandum and its final Environmental Impact Statement is scheduled for October 1987. The initial construction contract is scheduled for award in June 1988 with project completion scheduled for September 1991.

During FY 1986, the Plan for Engineering and Design will be completed and preparation of the draft General Design Memorandum and Environmental Impact Statement will be initiated. In FY 1987, the final General Design Memorandum and Environmental Impact Statement will be completed.

### RED ROCK DAM-LAKE RED ROCK, IOWA

Mr. **Bevill**. Mr. Smith is also interested in the Red Rock Lake project especially as periodic flooding affects landowners. What have you done in response to the language contained in the Continuing Resolution last year regarding "willing sellers"?

General **Pratt**. Sir, our District Commander has developed and submitted a plan of action for additional acquisition of lands at the Red Rock project to comply with the requirements of the Fiscal Year 1986, Continuing Resolution Authority. Under the plan, we will prepare and send letters to the owners of the flowage easement lands to determine how many or what percentage of them, would be "willing sellers". This phase is necessary in order to measure the scope and limits of the acquisitions. A Real Estate Design Memorandum will then be prepared covering affected land to identify the scope of the project.

### SAYLORVILLE LAKE, IOWA

Mr. **Bevill**. What is the status of the road and recreation development at Saylorville Lake, Iowa?

General **Pratt**. Improvements to Highway 415, which is the main access road to the existing recreation facilities on the reservoir's east side, will assure safe and efficient transportation of recreation travelers, commuters and local users. Segment A. a 4.2 mile, 4-lane roadway was completed in December 1985, at a cost of $4.9 million. Segment B, a 0.9 mile, 4-lane roadway, will be completed in FY 1987 using funds provided in FY 1986 at an estimated cost of $3.6 million. Construction will be initiated this year on two recreation items, Prairie Flower North Campground facilities and Sandpiper Access Road. These recreational items will be completed in FY 1987.

### BERGER PARK, CHICAGO, ILLINOIS

Mr. **Bevill**. As you know, Congressman Sid Yates of Illinois is concerned with the serious erosion problem occurring along Lake Michigan. What is the status of the work in the Berger Park area and other areas addressed in the Continuing Resolution last year?

General **Pratt**. Mr. Bevill, a letter report recommending Federal participation in Berger Park as a Section 14 project was forwarded to the Office of the Chief of Engineers on 23 December 1985. Funds for the preparation of plans and specifications have been provided and the detailed engineering work is underway. Assuming receipt of funds, construction could be initiated in the summer of 1986.

### EDGEWATER AREAS, SHERIDAN ROAD, CHICAGO, ILLINOIS

The Edgewater Areas were addressed by Section 122 of Public Law 99-190, the FY 1986 Continuing Resolution Authority on 19 December 1985. We initiated an assessment, in January 1986, to identify the problem areas, the magnitude of the problems, and potential solutions. A recommended course of action will be contained in a report scheduled for completion in mid-April. Assuming favorable findings in the initial assessment, construction could be initiated in late 1986.

### LANGDON PARK, WILMETTE, ILLINOIS

Mr. **Bevill**. Mr. Yates is also interested in the Langdon Park, Wilmette, Illinois, Section 103 project which was addressed in the FY 1985 Supplemental Bill. What is the status of that project?

General **Pratt**. Sir, the Langdon Park project was approved by the Chief of Engineers on 16 December 1985. Plans and specifications are prepared and construction can start in the spring of 1986 if we obtain the Local Cooperation Agreement, local cost sharing, and necessary Rights-of-way.

### CHICAGO HARBOR LOCK, ILLINOIS

Mr. **Bevill**. What specifically is involved in the repair of the lock electrical system at Chicago Harbor?

General **Pratt**. Sir, the repairs will replace the original and broken equipment, which was placed in operation since 1939, with a usable operational system. The main feature will be to replace the lock electrical operating system, reconstruct lock control facilities, and rehabilitate lock safety, lighting and security equipment.

Mr. **Bevill**. What is the total cost of the work?

General **Pratt**. Mr. Chairman, the estimated cost of the repair work is about $2,500,000.

### INDIANA HARBOR—CONFINED DISPOSAL FACILITY INDIANA

Mr. **Bevill**. The justification states you are planning construction of a confined disposal facility in FY 1987 at Indiana Harbor. Is this a new requirement and what is the total cost?

General **Pratt**. No sir, this is not a new requirement. The need for a confined disposal facility at Indiana Harbor, Indiana, has been known for some time. The funds being requested in FY 1987 are for the construction of the first disposal facility to serve the Indiana Harbor project. Dredging was last completed in 1972 at this harbor. Since that time, the Corps has been unable to dredge because we could not find an acceptable and feasible disposal site. With the construction of this confined disposal facility, we will be able to maintain the proper navigation depths within the harbor. The total estimated construction cost of the facility is about $22 million. There is $10 million included in the FY 87 Operation and Maintenance budget request to initiate construction of the confined disposal facility.

### BIRD ISLAND PIER

Mr. **Bevill**. What is the status of repairs at the Bird Island Pier in connection with the Black Rock Channel and Tonawanda Harbor, New York project?

General **Pratt**. Mr. Chairman, the project to repair Bird Island Pier is 51% complete at this time. The contractor's completion date is currently scheduled for May 1987.

### CORALVILLE LAKE AND RED ROCK DAM-LAKE RED ROCK, IOWA

Mr. **Bevill**. What is the nature of the dam structure repairs scheduled at Coralville Lake and Red Rock Dam in FY 1987?

General **Pratt**. Sir, the funds requested in FY 1987 will make repairs to the stilling basin at both reservoirs. At both projects, the concrete in the stilling basin has suffered severe erosion and has exposed the reinforcing steel in the structures. The proposed repairs will extend the life and safety of the dam structure.

### FISH AND WILDLIFE SERVICE CONCERNS ON MAJOR REHABILITATION WORK

Mr. **Bevill**. Major rehabilitation work at Locks and Dams 20, 21 and 22 on the Mississippi River is proposed in FY 1987. Explain the issue raised by the Fish and Wildlife Service relative to Environmental Impact Statements.

General **Pratt**. Sir, major rehabilitation of Locks and Dams 20, 21 and 22 is similar to other work started in mid 1970's to repair those aging navigation structures on the Upper Mississippi River and Illinois Waterway needing significant amounts of repair. Many of the structures on the waterway are approaching 50 years of age or older and rehabilitation is required to assure continued safe and efficient operation. The issue raised by the U.S. Fish and Wildlife Service (FWS) relates to proper evaluation of the cumulative or systemic impacts that might result from all of the rehabilitation work taken collectively.

In dealing with this issue, we are separating the work into two categories. The first category consists of work which could not reasonably be expected to lead to increases in barge traffic or otherwise produce cumulative or systemic environmental effects. Site specific environmental assessments that will address those items which are progressing according to schedule. The second category consists of work which might conceivably present cumulative or systemic environmental affects. That category of work will be evaluated collectively in an appropriate environmental document that will fulfill the requirements of the National Environmental Policy Act.

Mr. **Bevill**. Mr. Myers.

Mr. **Myers**. Thank you, Mr. Chairman.

General, we welcome you and are pleased to have you from the North Central Division.

One corner of my congressional district does reach up into your division, so it is a very small part of your responsibility.

General **Pratt**. Glad to have you, sir.

### INDIANA HARBOR, INDIANA

Mr. **Myers**. Indiana Harbor on the Lake is an important economic benefit to the State of Indiana. What can you tell me about progress at Indiana Harbor?

General **Pratt**. Yes, sir. I am aware of some of the continuing problems we have had there. We have not dredged Indiana Harbor since 1972, and it is probably one of the few places in the Great Lakes which has not been dredged for so long. Since we have high water in the Great Lakes right now, the lack of dredging at the harbor has not hindered commerical navigation.

Mr. MYERS. We have too much, but we will talk about that later.

General PRATT. Yes sir. We just issued the draft environmental impact statement for a dredge disposal facility just outside of Indiana Harbor, so we will be able to dredge that harbor. As you know, there is some controversy over the site location. We are awaiting the results of the Environmental Impact Statement and the comments from the public.

We have included $10 million in our budget in fiscal year 1987 to start construction on that dike disposal project. We are concerned about Indiana Harbor, as you have indicated you are.

Mr. MYERS. Is the State of Indiana cooperating in their responsibility in the dredge disposal facility?

General PRATT. Yes sir. They understand the significance of that harbor, and they are working with us. Together, we have searched high and low for an upland disposal area but have not been able to find one. That is really the crux of the matter.

Mr. MYERS. I wonder if the State is helping you.

General PRATT. Yes sir, they are.

## NAVIGATION SEASON EXTENSION

Mr. MYERS. We have had a study of extending navigation in the lakes and up in the Saint Lawrence Seaway. Are we making any progress?

General PRATT. No sir. The cost of winter navigation is so great right now, that there is very little interest in extending the season past 1 January, and starting it up in the early spring.

Mr. MYERS. It is closed now, is it?

General PRATT. For all practical purposes, yes sir. In fact, some repair work on the lock in being done right now by the Saint Lawrence Seaway Development Corporation.

Mr. MYERS. I guess what you are saying is it is not used that extensively to be that valuable for use year round.

General PRATT. The operation in the winter time is not that great. The operation costs to the shippers and the facilities make it less than economically desirable during the winter season.

## NORTH BRANCH CHICAGO RIVER, ILLINOIS

Mr. MYERS. What is the status of the North Branch Chicago River project?

General PRATT. We will complete the continuing planning and engineering with 1986 funds, and we will also prepare the Phase two general design memorandum. We are right now waiting on authorization of that project for construction.

## CHICAGO—SOUTH END LAKE MICHIGAN STUDY

Mr. MYERS. If the rest of you remember C-Selm, is there any revisitation of C-Selm in the offing that you know of in the study that Chicago has considered?

General **Pratt**. Sir, right now we have $120,000 in 1986, and we are requesting $300,000 in 1987 to continue that study. In an Interim study, we envision the feasibility of repairing or improving the McCook levee. We plan, in 1987, to complete the reconnaissance phase of the final report. That study will include the Lake Michigan Drainage and Grand Calumet Basin. We, also, will initate the feasibility study for the final report.

### HIGH WATER LEVELS ON THE GREAT LAKES

Mr. **Myers**. You spoke about the high water levels. Reports indicate the water levels keep getting higher and higher in the Great Lakes. Some of the people who own property that used to be on the beach now have water in their front yards. There was a study on that, too.

Can you give us any report about containing the level of the water in the Great Lakes in Lake Michigan?

General **Pratt**. I am relatively familiar with that topic as it has been on my desk many times since I became the Division Commander, as you can imagine.

Mr. **Myers**. I live a hundred miles from the lake. The water keeps getting higher.

General **Pratt**. In another hat, I also support the International Joint Commission which regulates the water. I am the U.S. Chairman of three of their boards which have to do with what little regulation we have of the Great Lakes. As you know, sir, we can control partially the waters on Lake Superior, and we control the waters on Lake Ontario through the St. Lawrence Seaway system.

We don't have direct control of the waters on Lake Michigan, Lake Huron or Lake Erie. They flow through in a natural system. Where we have control, we have been maximizing flow to the greatest extent we can, consistent with safety, ice cover and navigation.

We have been releasing water out of Lake Ontario at the maximum rate we can. In addition. we have established an advance measures program whereby local communities can develop some measure of flood protection. Right now, most of those projects have been in the States of Ohio and Michigan because of the way the storms affect Lake Erie. We are envisioning high water for another four to five months, though, sir.

We have set five straight months of high water records on the Great Lakes. This month will be another record because it will break the record for February.

During October and November 1985, we had probably the most significant rainfall we have received in the Upper Great Lakes Basin in a long time. With all of the rain that we received, we just haven't been able to get rid of the water. I know I am painting a bleak picture, but we don't expect water levels to go down significantly over the next few months.

We are providing as much assistance as we can to home owners and to corporations and municipalities around the lake wherever we can.

### DIVERSION OF LAKE MICHIGAN WATER AT CHICAGO

Mr. **Myers**. Wasn't there some consideration for a while about diverting more water down through the Chicago River?

General **Pratt**. Yes sir. Right now the Supreme Court has set a limit of 3200 cubic feet per second, averaged over a 25-year period that can be diverted down through the Chicago River, the Chicago Sanitary and Ship Canal, and the Illinois River.

Mr. **Myers**. United States Supreme Court?

General **Pratt**. Yes sir. The maximum we can divert down the Illinois River would be about a three-fold increase to 10,000 cubic feet per second. We studied that option last summer, and if we had diverted the maximum amount for six months, we would have lowered the level of Lake Michigan by about one inch, so even if we do that we are not talking about significant effects on the lakes. We also found that we couldn't have kept that rate for six months anyway because the Illionis River was at flood stage. We were looking at an uneven trade off, something we don't like to get into. A very small additional diversion that would have taken a long time to have significant impacts on the Great Lakes, would have adversely impacted on the Illinois River.

### INTERNATIONAL JOINT COMMISSION ACTIVITIES

Mr. **Myers**. You spoke about the three hats you wear with different commissions and boards that you work with Canada. Could you provide for the record what those are and about how much time you have to spend?

General **Pratt**. Yes sir, I will.

[The information follows:]

#### International Joint Commission and Boards of Control

The North Central Division Commander serves on the Three Great Lakes International Boards of Control. These are the International Lake Superior Board of Control that regulates the outflow from that lake, the International Niagara Board of Control that oversees the operation of the remedial projects which provide for the required Niagara Falls Treaty flows while allowing all surplus water to be available for hydropower generation, and, finally, the International St. Lawrence River Board of Control that regulates the outflow from Lake Ontario.

The time spent on International Joint Commission matters varies somewhat depending about the conditions prevailing and the needs of the International Joint Commission, for example, it depends on investigations underway, the creation of new study boards, or any special problems that arise. On the average, the Division Commander spends about 25 percent of his time on these activities. The staffs at the North Central Division Office and at Buffalo and Detroit Dstricts contribute about 12 man-years of effort to support these activities.

### MEMBERSHIPS IN IJC BOARDS

Mr. **Myers**. Is Canada cooperative in these effort? Do they participate like the United States does, or is it a one-way street where we are requested by Canada to do certain things and we have to decide?

General **Pratt**. No sir. The Canadians are quite cooperative in this. They view the Great Lakes as a natural resource, and they are very concerned about it just like we are. They are very responsive.

Mr. **Myers**. Please provide for the record the number of people on each of these commissions, including Canadians, as well.

[The information follows:]

### MEMBERSHIP OF INTERNATIONAL JOINT COMMISSION BOARDS OF CONTROL

#### INTERNATIONAL LAKE SUPERIOR BOARD OF CONTROL

*Canadian members*

Mr. E. Tony Wagner, Regional Director, Ontario Region, Inland Waters Directorate, Environment Canada, Burlington, Ontario.

*U.S. members*

Joseph Pratt, Brigadier General, USA, Commander, North Central Division, U.S. Army Corps of Engineers, Chicago, Illinois.

#### INTERNATIONAL NIAGARA BOARD OF CONTROL

*Canadian members*

Mr. E. Tony Wagner, Regional Director, Ontario Region, Inland Waters Directorate, Environment Canada, Burlington, Ontario.

Mr. Kenneth Rowsell, Chief, Marine Engineering, Department of Public Works, Ottawa, Ontario.

*U.S. members*

Joseph Pratt, Chairman, Brigadier General, USA, Commander, North Central Division, U.S. Army Corps of Engineers, Chicago, Illinois.

Mr. Ronald Corso, Director, Division of Hydropower Licensing, Federal Energy Regulatory Commission, Washington, D.C.

#### INTERNATIONAL SAINT LAWRENCE RIVER BOARD OF CONTROL

*Canadian members*

Mr. Michael A.H. Turner, Chairman, Director General, Aids and Waterways, Canadian Coast Guard, Transport Canada, Ottawa, Ontario.

Mr. John Bathurst, Chief, Engineering and Development Division, Water Planning and Management Branch, Environment Canada, Ottawa, Ontario.

Mr. Thomas Wigle, River Control Engineer, Rivers and Reservoir Section, Ontario Hydro, Toronto, Ontario.

Mr. André Carpentier, Department of Environment, Province Hydro, Toronto, Ontario.

*U.S. members*

Joseph Pratt, Chairman, Brigadier General, USA, Commander, North Central Division, U.S. Army Corps of Engineers, Chicago, Illinois.

Mr. William Kennedy (retired), Associate Administrator, St. Lawrence Seaway, Development Corporation, Department of Transportation, Massena, New York.

Mr. John Bartholomew, Mechanical Superintendent, St. Lawrence Power Project, New York Power Authority, Massena, New York.

Dr. Daniel Palm, Executive Director, St. Lawrence Eastern Ontario Commission, State of New York, Watertown, New York.

Mr. MYERS. Are there an equal number of Canadians and U.S.?

General PRATT. Yes sir. The size of the boards are different, but there is always an equal number of U.S. and Canadians and I have a counterpart Canadian chairman.

Mr. MYERS. Co-chairman.

General PRATT. Co-chairman, yes sir.

Mr. **Myers**. Thank you.

Mr. **Bevill**. Would you again give us the bottom line on the rising of the Great Lakes? Are there any long range plans to resolve that problem?

As I understand it right now, there is no immediate problem because you get rid of the surplus without any difficulty, but if it continues at the rate it is going and continuing to rise, are you going to have a long range problem?

General **Pratt**. Sir, if it continued at the current rate, we would have a long range problem. We suspect it will continue to rise, but not at the current rate. It will continue to go up until the summer months and then it will go back down again.

Our problem really this year was we had a very wet fall and instead of going down in the fall it kept going up. That is really what caused the major problem.

Mr. **Bevill**. The Chair recognizes Mr. Watkins.

Mr. **Watkins**. Mr. Chairman, I don't have any questions.

Mr. **Bevill**. This committee then will stand adjourned until ten o'clock tomorrow morning.

General, thank you for a very fine presentation. You are obviously very knowledgeable on these subjects. You have made a real impression here on your first testimony.

General **Pratt**. It has been my pleasure. Thank you very much.

Mr. **Bevill**. Thank you.

TUESDAY, FEBRUARY 25, 1986.

## NORTH ATLANTIC DIVISION

### WITNESSES

BRIG. GEN. PAUL F. KAVANAUGH, DIVISION ENGINEER
EDWARD P. NAUGHTON, CHIEF, PROGRAM DEVELOPMENT OFFICE
NEIL STUART, DEPUTY CHIEF, PLANNING DIVISION
SAMUEL J. TURN, CHIEF, GENERAL ENGINEERING SECTION

Mr. BEVILL. General Kavanaugh, we are pleased to have you before us. We are looking forward to hearing your testimony, and we are always glad to see your lovely wife, Marjorie. So we will just let you take charge now and present your testimony.

### INTRODUCTION

General KAVANAUGH. Thank you very much, Mr. Chairman.

Mr. Chairman, and members of the committee, I am Brigadier General Paul F. Kavanaugh, Commander of the North Atlantic Division. I am pleased to appear before the committee to present our fiscal year 1987 civil works budget request and report on the status of our water resources development program.

With me today are Mr. Edward Naughton, Chief of our Program Development Office; Mr. Sam Turn, Chief of the General Engineering Section; and Mr. Neil Stuart, Deputy Chief of Planning. Mr. Chairman, I have submitted testimony for the record, and, with your permission, I will briefly summarize our program and accomplishments.

### AREA OF RESPONSIBILITY

This slide shows the Division's civil works boundaries with our four district offices in the major port cities of New York, Philadelphia, Baltimore and Norfolk.

Shown on this slide are some of the vital statistics of this important region.

### CONSTRUCTION, GENERAL

This is our fiscal year 1987 budget request by major categories. I will discuss Construction, General first, since it is one of the largest line items in our program.

Here you see the reasons for the growth in this category. Our budget request for these 15 projects represents the greatest amount of dollars in our Construction, General program since 1978. I will discuss the two new starts as well as some of the projects that were funded in the fiscal year 1985 Supplemental Appropriations Act.

These are the five navigation projects from the Fiscal year 1985 Supplemental that we will work on in 1986 and for which we seek funds in Fiscal Year 1987.

And these are the four flood control projects and one shoreline protection project from the same Act. These ten projects account for $95.4 million in our construction budget request.

### NEW CONSTRUCTION STARTS

For fiscal year 1987, these are our two new construction start projects. They account for about $5.65 million in our program.

The first new start is at Camden, New Jersey, as shown here. We are requesting $2.7 million to start and complete dredging in Fiscal Year 1987 in front of the Beckett Street terminal from the present 30-foot depth to 37 feet. The new depth would help reduce shipping costs at this facility. The South Jersey Port Corporation has agreed to cost-sharing requirements.

The second new start is a modification for water supply to the Francis E. Walter Dam, shown on this slide. The dam was built in the 1960s as a flood control project. The Delaware River Basin has suffered from a variety of water shortage conditions in four out of the last five years. We are seeking $3 million to add 70,000 acre-feet of water supply storage by raising the dam 30 feet. The Delaware River Basin Commission is the local sponsor and has agreed to meet cost sharing requirements. We expect to get a local cooperation agreement soon and complete preconstruction planning in 1986.

### BALTIMORE HARBOR AND CHANNELS, MD AND VA

Going back to our navigation projects funded from the Fiscal Year 1985 Supplemental, I will discuss only the highlighted ones in white. This slide shows the authorized Federal channel in the Baltimore 50-foot project. The reaches shown in yellow—about 57 miles—will need dredging to 50 feet. The rest of the channel—about 117 miles—is naturally deep to at least 50 feet. Our request of $54 million will enable us to continue this project. When this effort is completed, shippers will be able to use larger and more efficient ships in the Baltimore Port area.

### NORFOLK HARBOR DEEPENING, VA

The Norfolk Harbor and Channels deepening project in Virginia involves the deepening of three channel reaches to 55 feet. Norfolk Harbor moves about half of the nation's total coal exports each year. Colliers, such as you see here, cannot sail fully loaded due to depth limitations in the existing channels. We are requesting $10 million to begin channel deepening in Fiscal Year 1987.

### KILL VAN KULL AND NEWARK BAY, NY AND NJ

At Kill Van Kull, we are requesting $12 million to continue deepening the Kill Van Kull and Newark Bay Federal channels to 45 feet. This will provide for greater vessel operating efficiency.

The Port Newark and Port Elizabeth facilities together are the nation's largest container complex and move more than 13 million tons of cargo per year. The project is supported by the Port Authority of New York and New Jersey, which has said it will comply with cost-sharing requirements.

The remaining five projects from the fiscal year 1985 supplemental funding are shown here. Again, I will discuss just those highlighted in white.

### RICHMOND, VA

This slide shows our plan of improvement to provide flood protection for Richmond, Virginia. It calls for a system of floodwalls and levees on both sides of the river in the downtown area. Here is a view of that area of Richmond during last November's flood. At that time, the James River crested about 30 feet above flood stage, damaging commercial and industrial properties. Interstate 95, which you see crossing the river, was closed to traffic for a whole day. Two bridges across the river just upstream were closed for two days. Flood damages to the city were estimated at $47 million. Our flood protection plan would have prevented an estimated $41 million in damages.

### LIBERTY STATE PARK LEVEE AND SEAWALL, NJ

In New Jersey, we are requesting $5 million for construction on the Liberty State Park Levee and Seawall project. The State of New Jersey is highly supportive of this project. Using state funds, it has dredged the southern end of the area and constructed a portion of the upland disposal area. The proposed plan of improvement includes construction of a crescent-shaped levee and protective seawall and landfill.

### ELIZABETH RIVER AND TRIBUTARIES, NJ

Our only general investigations new start is the Elizabeth River and Tributaries study. This river basin has had major flooding five times since 1971. This river basin drains a densely populated urban area of about 23 square miles before it empties into Arthur Kill. With the request of $195,000, we will determine the feasibility of more detailed studies to provide flood protection measures upstream of the existing project in the City of Elizabeth.

### NAVIGATION STUDIES

These are some of our major navigation investigations of harbor and channel improvements. I will discuss them briefly. Two of the studies are shown here in yellow. The New York Harbor and Adjacent Channels survey involves Claremont Terminal and Port Jersey Access Channels. These are used by petroleum and scrap iron shippers, as well as several container lines. We will complete this study with the requested funds. For Arthur Kill-Howland Hook, we are investigating the deepening of a portion of the existing 35-foot channel for another five to six feet. Our recommended plan will allow full loading of existing vessels and result in substantial transportation savings. The $500,000 requested will be used to continue the study. Our overall planning and engineering should be finished in September, 1988.

On the Delaware River, we are studying the need for improved channels for the ports shown here. In Fiscal Year 1985, we completed an interim feasibility report that recommended channel deepening at Camden and the Schuylkill River. Our budget request of $850,000 will allow us to determine if improvements greater than 40 feet are needed for the entire study area, as well as lesser improvements not covered in the interim report.

### WATER SUPPLY

Water supply was again a problem in the Northeast in 1985. This is a view of New York City's Ashokan Reservoir last September when water supply was at a very low level. Water problems are almost annual events in the New York metropolitan area and the Delaware River Basin.

In 1985, the Delaware River Basin Commission requested water supplies from our flood control dams at Blue Marsh and F.E. Walter. The water was needed to help alleviate drought conditions and prevent the salt line from moving up the Delaware river to threaten water supplies to Philadelphia and other communities. The Corps provided 34,000 acre-feet in response to the Commission's request.

### MAJOR STORMS

Storms in the North Atlantic Division during 1985 caused flooding with damages in the hundreds of millions of dollars. Hurricane Gloria hit in late September and tropical storm Juan struck in early November. Although Hurricane Gloria could have been a major disaster, it brought mostly wind damage in our area with some flooding. At Ocean City, damages were estimated at $10.5 million.

### HURRICANE GLORIA

On this slide, you can see where the storm pulled away about six feet of sand, exposing the building foundation. We are requesting $500,000 to investigate hurricane protection of this area in our study of the Atlantic Coast of Maryland and Assateague Island, Virginia.

Downed trees and power lines were common on Long Island, New York. Power was lost in many communities for about a week. Many small boats like this one were damaged.

### TROPICAL STORM JUAN

Tropical storm Juan was a different story. It came north from the Gulf of Mexico and brought heavy rains to our region. It killed more than 40 people and caused devastating flooding in West Virginia, Maryland, Pennsylvania and Virginia.

This is in Old Town, Alexandria. The scale marked on the corner of the building shows that the water here is at least four feet over mean sea level. The Commonwealth of Virginia suffered damages estimated at $750 million. This dry goods store at Harpers Ferry was not so dry after tropical storm Juan dumped its rains, and, at

Scottsville, Virginia, many voters had to take boats to the voting polls instead of their cars.

During Fiscal Year 1985, our flood control projects prevented an estimated $19 million in damages. However, after tropical storm Juan went through in November, flood damage prevention estimates increased sharply. For this event alone, division flood control projects prevented nearly $240 million in damages.

That storm did little or no flood damage to areas along the north branch of the Potomac River because they were protected by our local protection projects and our Bloomington Lake project, shown here at high pool. At Bloomington, the water was filled with storm debris and close to the top of the spillway gates. This project and Maryland's Savage River dam are estimated to have prevented damages of over $140 million from this storm.

### OPERATIONS AND MAINTENANCE

In our O&M program, the amounts you see here will provide for maintenance work on 41 channel and harbor projects and nine protection of navigation projects. The request will also provide for operational requirements on 22 flood control projects and for our regulatory activities.

### CHESAPEAKE AND DELAWARE CANAL BRIDGES

Included in our operations and maintenance request is $7.75 million for work on the Summit Bridge shown here, and the St. Georges Bridge, both of which cross the Chesapeake and Delaware Canal. These bridges are major highway links with traffic averaging over 38,000 vehicles daily.

Mr. Chairman, that concludes my presentation on the North Atlantic Division's Fiscal Year 1987 budget request of $270,571,000 and the status of our civil works activities. I would be pleased to answer any questions you may have.

Thank you.

[The statement of Brigadier General Paul F. Kavanaugh follows:]

# FISCAL YEAR 1987 BUDGET REQUEST STATEMENT
SUBCOMMITTEE ON ENERGY & WATER DEVELOPMENT
HOUSE COMMITTEE ON APPROPRIATIONS
BG PAUL F. KAVANAUGH, COMMANDER
NORTH ATLANTIC DIVISION
U.S. ARMY CORPS OF ENGINEERS
25 FEBRUARY 1986

## INTRODUCTION

Mr. Chairman and members of the Committee. I am Brigadier General Paul F. Kavanaugh, Commander of the North Atlantic Division. I am pleased to appear before the Committee to present our Fiscal Year 1987 Civil Works Budget Request and report on the status of our water resources development program. I will be assisted today by Mr. Edward Naughton, Chief of our Program Development Office, Mr. Sam Turn, Chief of the General Engineering Section, and Mr. Neil Stuart, Deputy Chief of Planning.

## AREA OF RESPONSIBILITY

The geographic boundaries of the Division cover the major river basins in all or part of eleven north and mid-Atlantic states and the District of Columbia, encompassing a land area of 112,000 square miles. They extend southward from the Lake Champlain and Hudson River Basins in New York and Vermont, through the Delaware, Susquehanna and Potomac River Basins to the James River Basin in Virginia, and include a portion of the Chowan River Basin in Virginia and North Carolina. Our 10,617 miles of shoreline on the Atlantic coast includes the important Chesapeake and Delaware Bays.

## REGIONAL CHARACTERISTICS

The region, while generally characterized as urban since it holds over 40 million people in only about 3 per cent of the nation's land area, has a significant amount of undeveloped land, farms, wetlands and coastline. Along with an aging infrastructure, these form the background for a variety of challenges as the Division meets its responsibilities in navigation, flood control, coastal resources protection and other water resource categories.

The North Atlantic Division, headquartered in New York City, serves the region through four district organizations that are located in the major port cities of New York, Philadelphia, Baltimore and Norfolk. These four ports, which alone account for over 300 million tons of waterborne commerce and 600,000 jobs, are also vital to our national defense capability.

## BUDGET SUMMARY

Our Fiscal Year 1987 Civil Works Budget Request is $270,571,000. The amount includes $4,045,000 for five continuing surveys and one Phase I study; $6,165,000 for 10 Continuation of Planning and Engineering efforts; $1,735,000 for four Advance Engineering and Design Projects; $111,150,000 for Construction, General; and $147,476,000 for Operations & Maintenance. The requested funds will enable us to continue work on 13 Construction, General projects and initiate two new projects. The funds requested will also provide for maintenance work on 41 channel and harbor projects and for nine protection of navigation projects, as well as for operational requirements on 22 flood control projects, and for our regulatory activities.

## FUNDING COMPARISON BETWEEN FY 1986 AND FY 1987

The budget request is nearly $101,000,000 higher than the amount currently programmed for FY 1986 mostly because of increases in Construction, General and Operations & Maintenance categories. Our budget request for General Investigations funds shows a decrease this year because several projects that were in the Continuation of Planning and Engineering stage in FY 86 are being budgeted for construction funds in FY 1987.

## CONSTRUCTION GENERAL

Our Budget Request for Construction General is $111,150,000. This request is larger than it has been in recent years and reflects the initiation of two new construction starts for $5.65 million and the continuation of 10 projects for $95.4 million that were initiated with funds included in the FY 1985 Supplemental Appropriations Act. This is the first testimony on these 12 projects in the construction category. The two new construction starts for FY 87 are the Delaware River navigation project in the vicinity of Camden, N.J., and the modification of F.E. Walter Dam, Pa. These are described below, along with the 10 projects included for funding in the FY 1985 Supplemental Appropriations Act.

## CONSTRUCTION, GENERAL NEW STARTS--FISCAL YEAR 1987

### DELAWARE RIVER IN THE VICINITY OF CAMDEN, NJ

We are requesting $2.65 million to initiate and complete the deepening of the Delaware River in the vicinity of Camden, New Jersey. The project provides for dredging the access to the Beckett Street Terminal from 30 to 37 feet. Transportation costs for vessels unloading at the terminal would be reduced by eliminating the need to light-load, to use smaller ships, or to wait for high tides. The South Jersey Port Corporation has expressed its willingness and ability to meet the requirements of local cooperation and cost-sharing in order to facilitate a new construction start in FY 87.

## FRANCIS E. WALTER DAM, PA

The second new construction start for FY 87 is the Francis E. Walter Dam modification for water supply for which we are requesting $3.0 million. The dam, built in the 1960's as a flood control project, is located on the Lehigh River in Luzerne and Carbon Counties, PA. The modification would raise the existing dam 30 feet in order to add 70,000 acre-feet of water supply storage to the Delaware River Basin. This area has suffered from drought warnings, emergencies and water rationing in a number of cases over the last several years. In January 1985, the Delaware River Basin Commission issued a drought warning for the area, the fourth in the last five years. In May 1985, a drought emergency was declared with restrictions on water use and water rationing in many communities. The Delaware River Basin Commission is the local sponsor for the project and has indicated its intent to follow whatever cost-sharing arrangements that are reached by the Congress and the Administration. Execution of a Local Cooperation Agreement is expected in the next few months. Preconstruction planning for this project will be completed in 1986.

## PROJECTS INCLUDED IN FY 85 SUPPLEMENTAL APPROPRIATIONS ACT

### BALTIMORE HARBOR AND CHANNELS, MD & VA

Baltimore Harbor is one of the major seaports serving the North Atlantic Coast of the United States. Waterborne commerce through the port averaged 50,300,000 tons annually for the period 1973-1982. A large portion of the port's commerce moves in foreign trade with a very high percentage of that consisting of bulk commodities such as iron ore, petroleum, grain, sugar and coal, which are moved most efficiently in large carriers. The proposed deepening of the harbor channels from 42 to 50 feet will produce substantial benefits resulting from the use of larger, more efficient ships. We are requesting $54 million to continue work on this project in FY 1987. The State of Maryland is the local sponsor for the project and execution of a Local Cooperation Agreement is expected shortly.

### NORFOLK HARBOR AND CHANNELS (DEEPENING), VA

This project is located in Hampton Roads, a 25-square-mile natural harbor serving the ports of Norfolk, Newport News, Portsmouth, and Hampton, VA. This port is the leading coal port in the U.S. and annually accounts for half of the total national coal exports. However, the problem facing the port is that the channels are not deep enough to accommodate increasing vessel sizes that transport the principal commodities such as coal and grain. Hampton Roads coal terminals already receive colliers in excess of 100,000 deadweight tons that cannot sail fully loaded with the existing 45-foot depths in the channels. Unit transportation costs will be reduced when larger vessels are able to load to capacity following the deepening of the channels. We are requesting $10 million to begin dredging in FY 1987. The Virginia Port Authority on behalf of the Commonwealth of Virginia is the local sponsor and has indicated its support of this project.

## KILL VAN KULL AND NEWARK BAY, NY & NJ

We are requesting $12 million to continue the deepening of the Kill Van Kull and Newark Bay Federal channels to 45 feet for increased vessel efficiency. The project is located in New York Harbor five to eight miles southwesterly of Battery Park, N.Y. City, and connects Ports Newark and Elizabeth with the New York Harbor entrance channels. Cargo handled at Ports Newark and Elizabeth, which together comprise the nation's largest containerport, is more than 13 million tons per year. The present 35-foot channels preclude currently used containerships from fully loading and will further hamper future fleets of larger draft vessels. This project has the strong support of the Port Authority of New York and New Jersey. Preconstruction planning for this project is scheduled to be completed in FY 1986.

## MORICHES INLET, NY

We are requesting $2.5 million to continue construction of jetties at Moriches Inlet. Moriches Bay and the adjacent ocean areas constitute an important marine fishery. The U.S. Coast Guard currently notifies mariners that conditions at the inlet are extremely hazardous and that navigation through there is considered unsafe. The proposed plan of improvement also includes dredging of the channel to 10 feet. The New York State Department of Environmental Conservation is the local sponsor and has indicated its intent to comply with the items of local cooperation.

## BARNEGAT INLET, NJ

For Barnegat Inlet, New Jersey, we are requesting $6 million for construction of a new south jetty. Barnegat Inlet is located on the Atlantic Coast of New Jersey in Ocean County, approximately 32 miles northeast of Atlantic City. This is a busy inlet with some 800,000 recorded transits made annually. Channel shoaling, wave activity and other conditions make navigation hazardous. As a result of capsizings at the inlet, during the period 1979-1984, 11 lives were lost and more than 35 persons had to be rescued. The proposed plan of improvement, which also includes dredging of the channel, will provide mariners safe access through the inlet. The design will also provide for reduced shoaling over a longer term and reduce maintenance dredging costs.

## RICHMOND, VA

The flood of November 1985 is only the most recent major flood in the history of Richmond, VA. The other two major floodings within the last 20 years were Hurricane Camille in 1969 and Hurricane Agnes in 1972. This past November, the James River crested at about 30 feet above flood stage and damaged mainly commercial and industrial properties. The 14th Street Bridge and the Boulevard Bridge were closed November 7th and reopened November 9th. Interstate Highway 95 was closed to traffic for one day during this period. Flood damages to the city were estimated at about $47 million. Our flood protection plan of improvement, which consists of a system of floodwalls and levees on both sides of the James River in the downtown area, would have prevented an estimated $41,000,000 in damages. We are requesting $1,200,000 to complete our engineering effort and initiate a contract for demolition work at this project.

### LIBERTY STATE PARK LEVEE AND SEAWALL, NJ

The project is located in Jersey City, NJ, opposite the Statue of Liberty and Ellis Island, two of the nation's most visible national monuments. The State of New Jersey's plan for Liberty State Park includes a new waterfront, inland waterways, a marina, an amphitheater, historic areas, community facilities, and public buildings accessible to nearly 20 million people in the New Jersey-New York metropolitan region. The State of New Jersey is highly supportive of this project. In 1983, the State used its funds to complete a contract for construction of the southern peninsula bulkhead and landfill. The $5 million requested will be used for construction of a crescent-shaped levee and protective seawall, and landfill.

### ARDSLEY, NY

The Village of Ardsley, NY has suffered severe damage to its commercial and industrial area by flooding of the Saw Mill River. The most damaging flood of record resulted from the storm of April 1984 that caused damages estimated at $1.6 million. Flooding in September 1975 caused $1.3 million in damages. We are requesting $2 million for construction of a flood control project comprised of a concrete flume, floodwall, levees, relocation of an existing channel, removal of a bridge, and the floodproofing of four structures. The State of New York is the local sponsor.

### VIRGINIA BEACH STREAMS, CANAL NO. 2, VA

The Virginia Beach Streams, Canal No. 2 project is located within the corporate limits of the City of Virginia Beach, VA. This area is subject to coastal storms and hurricanes with the greatest rainfall of record occurring in 1964. Over 100 homes were flooded to a depth of approximately one foot over the first floor and many streets were either blocked or washed out. If a storm of this magnitude were to occur again, damages would exceed $8 million. Our plan of improvement will provide flood protection to residential and commercial properties. We are requesting $2.2 million to continue building a new 2.6 mile long drainage canal and to improve an existing 1.1 mile-long canal. Contract work will start in FY 1986.

### COWANESQUE LAKE, PA

Cowanesque Lake is an existing flood control reservoir located in Tioga County, PA. This project is a modification to reallocate 25,600 acre-feet of flood storage to provide 8.3 billion gallons of water supply storage and alleviate low flows on the Susquehanna River during drought situations.

The Susquehanna River Basin Commission will be responsible for all costs of new construction required to modify the existing project. These costs will include reconstruction of the intake tower, additional reservoir slope stabilization, and replacement of existing recreation facilities. The Commission will also be responsible for 50% of the expanded recreation facilities that can be provided because of the larger lake. Our budget request of $470,000 for FY 87 will enable us to continue construction.

## CONTINUING CONSTRUCTION GENERAL

In addition to the budgeted new construction starts and the projects that are being initiated with funds included in the FY 85 Supplemental Appropriations Act, we have three other projects for which we are requesting funds in order to continue work begun in earlier years.

### N. Y. HARBOR COLLECTION AND REMOVAL OF DRIFT, NY & NJ

We are continuing with the removal of drift sources in New York Harbor and request $4.6 million to initiate work at Shooter's Island and Bayonne, and to continue work at both Brooklyn Reach One and Weehawken to Edgewater Reach Two.

### VIRGINIA BEACH, VA (REIMBURSEMENT)

The existing Virginia Beach project provides for beach nourishment along 3.3 miles of commercially-developed, publicly-owned beach in the City of Virginia Beach on the Atlantic Ocean. The shoreline is exposed to constant wave attack and has a history of alternating advance and recession. The shifting of the shoreline and erosion exposes improved property to wave damage. The nourishment program is supported by the City of Virginia Beach and our budget request of $530,000 will be used to reimburse the city for the Federal share of the cost of periodic nourishment.

### BALTIMORE HARBOR AND CHANNELS, MD

The Baltimore Harbor and Channels, MD project is scheduled for completion in FY 1988. The $5,000,000 requested will continue the dredging of the connecting channel to the C & D Canal. Completion of the channel will provide savings to ship traffic by shortening the route between Baltimore Harbor and the C & D Canal by 12 miles.

## GENERAL INVESTIGATIONS

### ELIZABETH RIVER AND TRIBUTARIES, NJ

The Elizabeth River and Tributaries study is the only general investigations new start for FY 87. The Elizabeth River basin is located in Union and Essex Counties and drains an urban area of 23 square miles before it empties into Arthur Kill. The basin has experienced major flooding five times since 1971. This study will investigate improvements upstream of the existing Federal project at the mouth of the river in the City of Elizabeth. Hillside and Irvington, NJ are two towns that have been identified as being particularly vulnerable. A recurrence of the flood of record in these two areas would cause damages exceeding $1,600,000. With the budget request of $195,000 we will complete in March 1988 a reconnaissance report to determine the feasibility of more detailed studies.

## PASSAIC RIVER BASIN, NJ & NY

The Passaic River Basin in northern New Jersey and a small part of New York is the most serious flooding problem area on the east coast. Within 19 miles of mid-town Manhattan, the 935-square-mile basin has chronic and persistent flooding problems.

There are 132 municipalities and over 2 million people within the overall basin. Within the floodplain itself, there are 300,000 people and 48,000 structures. In 1983, there were three successive episodes of flooding, and in April 1984 floodwaters caused two deaths and over a quarter billion dollars in damages. A storm similar to the 1903 flood of record today would cause over $1 billion dollars in damages.

In previous years we completed five interim studies, of which four recommended Federal action on channel modification projects. With the $2.2 million requested for FY 1987 we will continue the Rockaway River Sub-Basin interim study and the clearing and snagging substudy for the Passaic, Pompton, Pequannock, and Ramapo Rivers and Tributaries. We will also complete the investigation of the main stem, including the Third River Sub-Basin. During the past year we combined the Third River and main stem investigations at the request of the State of New Jersey

The State of New Jersey supports a main stem project consisting of a 13.6 mile tunnel, 40 feet in diameter, to divert floodwaters from the upper Passaic Basin past critical areas to Clifton, on the Nutley border. It would have two inlets, at Pompton and Little Falls, and would be capable of carrying 12 million gallons per minute. The tunnel would range from 90 to 450 feet underground.

## NAVIGATION INVESTIGATIONS UPDATE

The North Atlantic Division ports of New York, Philadelphia, Baltimore and Norfolk rank among the top ports of the nation and they continue to compete strongly for dominance in various shipping markets.

In addition to a number of navigation projects in the Construction, General category, we are conducting a number of surveys investigating navigation improvements at the request of the Congress. In New York, we have the N.Y. Harbor and Adjacent Channels Survey, and the Arthur Kill-Howland Hook Marine Terminal, NY & NJ Continuation of Planning and Engineering effort.

## NEW YORK HARBOR & ADJACENT CHANNELS, NJ & NY

The N.Y. Harbor and Adjacent Channels survey involves two channels, the Claremont Terminal and the Port Jersey access channels. These channels serve petroleum and scrap iron shippers, and several container lines. The study is investigating improvements to these secondary access channels. The $200,000 budgeted for FY 87 will be used to complete the study in June 1987.

## ARTHUR KILL-HOWLAND HOOK MARINE TERMINAL, NY & NJ

The Arthur Kill-Howland Hook Marine Terminal, NY & NJ Continuation of Planning and Engineering effort is investigating the deepening of the existing 35-foot navigation channel to 41 feet for approximately two miles, and to 40 feet for approximately one mile to provide increased vessel operating efficiency. The current 35-foot depth channel inhibits full economy of existing deep-draft ocean-going vessels. The recommended plan will allow full loading and result in substantial transportation savings. The $500,000 requested in FY 1987 will be used to continue the subsurface exploration and detailed design and engineering. The overall planning and engineering is scheduled for completion in September 1988.

## DELAWARE RIVER COMPREHENSIVE NAVIGATION SURVEY, PA, NJ & DE

[illegible] Philadelphia area, the Delaware River Comprehensive Navigation Su[illegible], NJ & DE is investigating the need for improved channels for the ports of Philadelphia, Camden, Trenton, and Wilmington to handle current and prospective traffic in commodities such as oil, coal and grain. In FY 85, an interim feasibility report was completed with recommendations for channel deepening at Camden, NJ and Schuylkill River, PA. The budget request of $850,000 will provide funds to investigate improvements greater than the 40-foot depth throughout the entire study area and improvements to lesser depths in those areas not covered by the interim report.

## DROUGHTS

The imbalance of water supply is one of the perennial problems that characterizes the Northeast. Although annual precipitation may be normal, there are times during the year when there are severe water shortages because supplies do not match the needs of consumers. Drought warnings, emergencies and water rationing have been almost annual occurrences during the past several years. In 1985, the region again suffered through a summer and autumn of low water supply and the Delaware River Basin Commission requested that the Corps store water supplies at our flood control dams at F. E. Walter and Blue Marsh. The water was needed to help alleviate drought conditions and prevent the salt water line from advancing up the Delaware River to the point where it would threaten water supplies of Philadelphia and other communities. The Corps dams provided 34,000 acre-feet of water in response to the DRBC's request.

## COASTAL AND RIVERINE FLOODING

Storms in the North Atlantic Division during 1985 caused millions of dollars in flood damages. Major storms included Hurricane Gloria in late September and the aftermath of Tropical Storm Juan that moved northward out of the Gulf of Mexico November 3-7. But for quirks of timing and direction, Hurricane Gloria could have been a major catastrophe. When it did come ashore on Long Island, NY, it arrived at low tide bringing mostly wind damage that downed power lines and trees. The rains associated with the hurricane caused damages estimated at $9-10 million in Luzerne and Lackawanna Counties in northeastern Pennsylvania. Wind and wave action caused an estimated $10.5 million in damages at Ocean City, MD. We have a budget request for $500,000 to investigate problems at Ocean City in our Atlantic Coast of Maryland & Assateague Island, VA study. This CP & E study is due for completion in September 1989.

When Tropical Storm Juan moved into the Division area, it brought moisture from the Gulf and picked up more from the Atlantic Ocean. Up to 18 inches of rain fell on parts of Virginia, Maryland, West Virginia, and Pennsylvania. As a result of the storm, over 40 people died and hundreds of homes and businesses were destroyed or damaged. Record-breaking flooding occurred in the headwaters of the Roanoke, James and Potomac River Basins. River levels exceeded crests previously established by the historic tropical storms Camille (1969) and Agnes (1972). The Roanoke-Salem area was hit with a flood of 130 year frequency. In the Lynchburg area, the James River flood elevations exceeded the previous record stage by about seven feet. In Richmond, the flood was approximately a forty-year event with several blocks of commercial and industrial buildings adjacent to the James River severely damaged. Damages were estimated at over $900 million for the four states with more than $750 million in Virginia alone.

In the aftermath of Hurricane Gloria, the Corps moved quickly under existing authorities to provide assistance to affected communities. Following Presidential declarations of disaster, the Division accepted FEMA Mission Assignments in the States of New York, New Jersey and Pennsylvania to conduct preliminary damage assessments and damage survey reports. The Division Emergency Operations Center was activated and helicopter inspection trips were made of affected coastal areas. Fifteen Corps personnel were assigned to conduct operations in Pennsylvania, 20 in New York and seven in New Jersey.

Following Tropical Storm Juan in November, the Division's Emergency personnel again went into action with 25 personnel moving out to disaster points in the field. The Division accepted FEMA mission assignments for preliminary damage assessments and damage survey reports in the Commonwealth of Virginia as well as the State of West Virginia where it also accepted assignments for debris removal.

Because of these flood events, the Assistant Secretary of the Army for Civil Works has reprogrammed available FY 1986 funds for certain General Investigations studies. This allows resumption of the Phase I, A E & D studies of the Buena Vista, VA local protection project and the consideration of other areas impacted by the James River floods as well as initiation of work on flood problems in the Upper Potomac River Basin.

In addition, as a result of Hurricane Gloria and Tropical Storm Juan, the Division has received 9 requests for studies under the Small Projects program, and is expecting about 11 more.

## FLOOD DAMAGES PREVENTED

Although 1985 was essentially a dry year, NAD flood control projects are estimated to have prevented nearly $19,000,000 in flood damages through September. However, the precipitation from Tropical Storm Juan moved flood damage prevention estimates up sharply as the 1986 fiscal year began. In Virginia, Gathright Dam and Lake Moomaw alone prevented an estimated $70,000,000 in damages from flooding. And, areas along the North Branch Potomac River received little or no damage because of flood protection provided by our Bloomington Lake project and Maryland's Savage River Dam. Estimates show that these two projects prevented damages of over $140 million. Such statistics continue to prove the value of our constructed projects in the prevention of flood damages.

## OPERATIONS & MAINTENANCE

Our program request of $147,476,000 for Operations and Maintenance, General constitutes the major portion of our Civil Works funding request. About $121,881,000 of this amount supports navigation activities at 41 projects. This figure includes nearly $100 million for dredging and maintenance of our four major ports alone. We have budgeted $12,237,000 for 22 flood control projects, $6,693,000 for general regulatory functions, and $6,665,000 for protection of navigation. Major increases in Operations & Maintenance reflect variations in annual dredging requirements, operations at dredged material disposal sites, and the repair of two bridges over the Chesapeake & Delaware Canal.

## C&D CANAL BRIDGES, DE & MD

We have included $7.75 million in our Operations & Maintenance request for the rehabilitation of the Summit Bridge, and to initiate plans and specifications for work on the St. Georges Bridge. Both bridges are located in Delaware across the Chesapeake and Delaware (C&D) Canal, and are major highway links in that area with average annual traffic amounting to over 38,000 vehicles daily.

## CONCLUSION

Mr. Chairman, that concludes my presentation on the North Atlantic Division's Fiscal Year 1987 Budget Request of $270,571,000 and the status report of civil works activities. I would be pleased to answer any questions you may have.

Mr. **Bevill**. Very good. Thank you. We will insert the justification material for the North Atlantic Division in the record at this point, without objection.

[The justifications follow:]

Justification of Estimates for Civil Functions Activities
Department of the Army, Corps of Engineers
Fiscal Year 1987
SUMMARY NORTH ATLANTIC DIVISION

| General Investigations | F.Y. 1986 Allocations $ | F.Y. 1987 Request $ | Increase or Decrease $ |
|---|---|---|---|
| Surveys Including Phase I Stage of AE&D | 3,560,000 | 4,045,000 | 485,000 |
| Continuation of Planning and Engineering | 7,725,000 | 6,165,000 | -1,560,000 |
| Advance Engineering and Design | 2,536,000 | 1,735,000 | - 801,000 |
| Construction, General | | | |
| Continuation of Engineering and Design | 0 | 0 | 0 |
| Construction | 30,770,000 | 111,150,000 | 80,380,000 |
| Major Rehabilitation and Dam Safety Assurance | 0 | 0 | 0 |
| Operation and Maintenance, General | | | |
| Project Operation and Maintenance | 125,000,000 | 139,726,000 | 14,726,000 |
| Major Rehabilitation | 0 | 7,750,000 | 7,750,000 |
| Total | 169,591,000 | 270,571,000 | 100,980,000 |

1/ Does not reflect reductions required by the Balanced Budget and Emergency Deficit Control Act of 1985 (Public Law 99-177).

| Study | Total Estimate Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ |

1. SURVEYS - NEW

a. Navigation Studies: None

b. Flood Damage Prevention Studies: The amount of $195,000 is requested in Fiscal Year 1987 to initiate and complete 1 Flood Damage Prevention Reconnaissance Study.

NEW JERSEY

| Study | Total Estimate Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| Elizabeth River and Tributaries | 195,000 | 0 | 0 | 195,000 | 0 |

The Elizabeth River Basin is located in Union and Essex Counties, New Jersey and drains an area of 23 square miles. The Elizabeth River flows generally southward for 12 miles in a continuous band of urban development through the Townships of Irvington, Hillside and Union and the Cities of Newark and Elizabeth, and empties into Arthur Kill, one mile southwest of Newark Bay. The reconnaissance study will determine the feasibility of providing flood protection measures along the Elizabeth River and its tributaries upstream of the existing project in Elizabeth, New Jersey. Flood damage centers identified in the Townships of Hillside and Irvington were subjected to extensive flooding most recently in 1971, 1973, 1974, 1977, and minor flooding in 1979. A recurrence of the record flood of August 1971 along the East Branch tributary of the Elizabeth River in Hillside would cause damages estimated at $710,000 (October 1985 prices). In Irvington a recurrence of the record flood of August 1974 would cause damages estimated at $930,000 (October 1985 prices). The funds requested in Fiscal Year 1987 will be used to initiate and complete a reconnaissance study to determine the need for detailed studies, obtain local cost sharing, and develop a plan of study for the feasibility phase study. The reconnaissance study is scheduled for completion in March 1988.

| Study | Total Estimate Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| TOTAL FLOOD DAMAGE PREVENTION | 195,000 | 0 | 0 | 195,000 | 0 |

| Study | Total Estimate Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ |
| c. Shoreline Protection Studies: None | | | | | |
| d. Special Studies: None | | | | | |
| e. Comprehensive Studies: None | | | | | |
| f. Project Review Studies: None | | | | | |
| GRAND TOTAL SURVEYS - NEW | 195,000 | 0 | 0 | 195,000 | 0 |

2. SURVEYS - CONTINUING

a. Navigation Studies: The amount of $1,050,000 is requested in Fiscal Year 1987 for the completion of 1 Navigation Study and the continuation of 1 Navigation study.

NEW JERSEY

| | | | | | |
|---|---|---|---|---|---|
| Delaware River Comprehensive Navigation Study, NJ, PA, & DE | 6,334,000 | 3,354,000 | 950,000 | 850,000 | 1,180,000 |

The existing Delaware River Navigation System includes six deep draft navigation projects serving the Ports of Philadelphia, PA; Camden, NJ; Trenton, NJ; and Wilmington, DE. These ports support annual vessel passages averaging 50,000 passages and tonnage averaging 130 million tons. The system provides a substantial economic stimulus to the entire region, recently supporting 100,000 port related jobs. The major commodities transported are crude oil and refined petroleum associated with the seven oil refineries located along the river and its tributaries. Other major commodities likely to benefit from improvement include iron ore; scrap;

| Study | Total Estimate Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ |
| Delaware River Comprehensive (Cont'd)<br>Navigation Study, NJ, PA & DE | | | | | |

coal; grain; chemicals; limestone; motor vehicles; gypsum and other dry bulk shipments; lumber; and containerized general cargo. The system also serves naval vessels being the headquarters of the Fourth Naval District. The Delaware River Port Authority, the Delaware River and Bay Authority, the Commonwealth of Pennsylvania, the City of Philadelphia, the City of Wilmington, the South Jersey Port Corporation and the owners and operators of large bulk cargo carriers cite the need for deeper channels and improved navigation facilities to fully accommodate current and future vessel movements through the Delaware River ports. An average of nine million tons of cargo are lightered into barges annually due to the current 40-foot depth limitation.

A Fiscal Year 1985 interim feasibility report, for the Delaware River from Philadelphia to Wilmington, recommended deepening of the lower Schuylkill River, Philadelphia, PA, from 33 feet to 40 feet; and the Beckett Street Terminal, Camden, NJ from 37 feet to 40 feet; and further consideration of deepening Wilmington Harbor, Delaware from 35 feet to 38 feet under the special continuing authorities program. No improvements were found feasible at Tioga Marine Terminal (Phila., PA), proposed Hog Island Terminal (Phila., PA), and Broadway Terminal (Camden, NJ). Work remaining to be done consists of investigating improvements greater than 40 feet throughout the entire study area and improvements to lesser depths in those areas not covered by the interim report.

With the funds provided in Fiscal Year 1986, studies will continue with emphasis on environmental testing, cost estimates, environmental impact assessment and screening of alternative plans to include optimization of the overall regional waterway system. In addition, an early action study for Salem River, NJ will be completed and one for Maurice River, NJ continued. With Fiscal Year 1987 funds, the Maurice River, NJ early action study would continue, preliminary plan formulation studies would be completed, and siginificant environmental, socio-economic, and salinity analyses would be initiated for the final report. The final study report of the Division Commander is scheduled for completion in July 1990.

| Study | Total Estimate Federal Cost | Allocation Prior to FY 1986 | Allocation -FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ |
| New York Harbor and Adjacent Channels, NJ & NY | 4,955,000 | 4,355,000 | 400,000 | 200,000 | 0 |

The purpose of the New York Harbor and Adjacent Channels study is to determine the feasibility of modifying the existing Federal project for New York Harbor to accommodate deep-draft vessels used in bulk crude oil transoceanic trade and support anticipated development of increased bulk steam coal movement in the Harbor. In addition, benefits to commodities such as petroleum products, scrap metal and general cargo are being investigated. The channels considered for improvements include the 45-foot deep Ambrose and Anchorage Harbor entrance channels, and secondary access channels to Claremont Terminal and Port Jersey, New Jersey. In October 1984 the Port Authority of New York and New Jersey announced its decision to terminate the development of a coal export facility in New York Harbor. This was the last proposed coal export facility for New York Harbor. Economic studies accomplished to date show that benefits derived from oil transportation savings alone do not justify deepening the entrance channels. Therefore, no further study of the entrance channels is contemplated. However, studies show that the two secondary access channels appear to be justified. The non-Federal Claremont Terminal Access Channel is a 24-foot deep (mean low water) channel which extends from Anchorage Channel to the head of navigation in Jersey City, New Jersey. Claremont Terminal accommodates about 35 deep-draft vessel visits and over 800,000 tons of cargo. The non-Federal 35-foot access channel into Port Jersey serves a containership operation with five shipping lines and has accommodated an average of 350 vessel visits and approximately 1.25 million tons of cargo. There is strong support for improvements to the two secondary access channels from both the Port Authority of New York and New Jersey, and the State of New Jersey.

The funds for Fiscal Year 1986 are being used to complete the feasibility study for the Claremont Terminal Access Channel and to continue economic studies, plan formulation, and engineering design for the Port Jersey Access Channel Study. The funds for Fiscal Year 1987 will be used to complete the final survey report, including Port Jersey. The final study report of the Division Commander is scheduled for completion in June 1987.

| | | | | | |
|---|---|---|---|---|---|
| TOTAL NAVIGATION | 11,289,000 | 7,709,000 | 1,350,000 | 1,050,000 | 1,180,000 |

| Study | Total Estimate Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ |

b. Flood Damage Prevention Studies: The amount of $150,000 is requested in Fiscal Year 1987 for the completion of 1 Flood Damage Prevention Study.

PENNSYLVANIA

| | | | | | |
|---|---|---|---|---|---|
| Lehigh River Basin | 1,985,000 | 1,635,000 | 200,000 | 150,000 | 0 |

This study is investigating the feasibility of development of hydroelectric power in the Lehigh River Basin. The Lehigh River Basin has a drainage area of about 1,370 square miles, embracing portions of nine counties in northeastern Pennsylvania including Wayne, Lackawanna, Monroe, Luzerne, Carbon, Schuylkill, Berks, Northampton, and Lehigh Counties. There are 15 tributaries to the Lehigh, the principal streams being the Little Lehigh Creek, Aquashicola Creek, Pohopoco Creek, Bear Creek, and Tobyhanna Creek. The Lehigh River has been studied for major hydroelectric power development in the past. However, its development was not economically justified as a single-purpose endeavor. Local interests have requested that the possibility of hydroelectric power be reinvestigated due to potential energy shortages and high alternative energy costs.

During preliminary studies, 19 alternative plans of improvement for power development were eliminated due to economic and engineering considerations. In the final stage of this study, 7 conventional site alternatives and 4 pumped storage configurations were being investigated as potentially feasible. Several alternatives were mutually exclusive. From these alternatives, 5 conventional hydropower projects with a total capacity of 50 MW, and 3 pumped storage projects with a maximum total capacity of 1,000 MW, could potentially be developed. Studies of Hydropower alternatives at Beltzville Lake and Penn Forest Reservoir site were completed in Fiscal Year 1986. Both studies found no Federal project was feasible. Fiscal Year 1986 funds are being used to continue the detailed investigations and systems analysis on the plans at F. E. Walter Dam, Allentown Dam and the Delaware Canal and initiate the Environmental Impact Statement. Fiscal Year 1987 funds will be used to complete the final report including the detailed investigations of the F. E. Walter, Allentown and Delaware Canal sites. Changes in study cost and schedule are due to early termination of the Beltzville Lake investigation. The final study report of the Division Commander is scheduled for completion in March 1987.

| | | | | | |
|---|---|---|---|---|---|
| TOTAL FLOOD DAMAGE PREVENTION | 1,985,000 | 1,635,000 | 200,000 | 150,000 | 0 |

c. Shoreline Protection Studies: The amount of $450,000 is requested in Fiscal Year 1987 for the continuation of 1 Shoreline Protection Study.

| Study | Total Estimate Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ |
| Chesapeake Bay (Shoreline Erosion), MD & VA | 2,000,000 | 500,000 | 300,000 | 450,000 | 750,000 |

The Chesapeake Bay and its tributaries have over 7,300 miles of shoreline in Maryland and Virginia, most of which are subject to erosion to varying degrees. Erosion is serious along extensive reaches of shoreline. Shoreline erosion over the past century in the Chesapeake Bay area has resulted in a loss of approximately 45,000 acres of land. This erosion has contributed significantly to the deposition of sediments in the Bay. The increased sediment deposits have contributed to water resources problems including adverse impacts on commercial navigation and fishing, recreational boating, and biological productivity in the Bay and its tributaries. The Environmental Protection Agency's 1983 report on its Chesapeake Bay program cited shoreline erosion as a primary water quality problem. The study will evaluate all adverse impacts of shoreline erosion and determine the costs and benefits of reducing the impacts. Both structural and non-structual alternatives will be considered in formulating erosion protection plans. The results will be recommendations for Federal projects at those particular sites which are found to be justified. Another focus of the study would be the consideration of using material dredged from navigation channels for placement on eroding shorelines to provide erosion protection.

The reconnaissance phase of the study is scheduled for completion in March 1986. In Fiscal Year 1986 we will also initiate the feasibility study contingent upon a favorable recommendation from the reconnaissance phase, and upon obtaining an acceptable cost sharing contract. Funds requested for Fiscal Year 1987 will be used to continue the Federal share of the feasibility phase of the study.

| Study | Total Estimate Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
|  | $ | $ | $ | $ | $ |
| Chesapeake Bay (Shoreline (Cont'd)<br>Erosion), MD & VA |  |  |  |  |  |

The estimated cost of the feasibility phase is $3,000,000. A summary of study cost sharing is as follows:

|  |  |
|---|---|
| Total Estimate Study Cost | $3,500,000 |
| Reconnaissance Phase (Federal) | 500,000 |
| Feasibility Phase (Federal) | 1,500,000 |
| Feasibility Phase (Non-Federal) | 1,500,000 |

The reconnaissance phase is schedule for completion in March 1986. The feasibility study is scheduled for completion in September 1988.

| Study | Total Estimate Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| TOTAL SHORELINE PROTECTION | 2,000,000 | 500,000 | 300,000 | 450,000 | 750,000 |

| Study | Total Estimate Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ |
| d. Special Studies: None | | | | | |
| e. Comprehensive Studies: None | | | | | |
| f. Project Review Studies: None | | | | | |
| GRAND TOTAL SURVEYS - CONTINUING | 15,274,000 | 9,844,000 | 1,850,000 | 1,650,000 | 1,930,000 |

3. SURVEYS - CONTINUATION OF PLANNING AND ENGINEERING STUDIES.

a. Navigation Studies: The amount of $500,000 is requested in Fiscal Year 1987 for the continuation of 1 Planning and Engineering Navigtion Study.

NEW YORK

| Study | Total Estimate Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| Arthur Kill Channel, Howland Hook Marine Terminal, (Deepening) NY & NJ | 900,000 | 0 | 200,000 | 500,000 | 200,000 |

The study area is located within the Port of New York and New Jersey. The Arthur Kill is a tidal strait connecting Raritan Bay with Newark Bay. The navigation channel depths inhibit full economy of existing deep-draft ocean going vessels. Tankers arriving with drafts approaching the 45 foot Ambrose and Anchorage entrance channel depths must lighter off to barges in deep New York Harbor anchorages in order to reduce their drafts to safely transit the 35 foot deep inshore channels. Container vessels cannot lighter in anchorages and therefore must load to less than full depths for long ocean voyages at substantially increased cost. The original study was authorized by House Resolution of the Committee on Public Works and Transportation adopted 9 May 1979. The Division Engineer Public Notice was issued on 16 December 1985 recommending deepening the existing 35 foot navigation channel to a 41-foot deep channel for a distance of 2.1 miles and a 40-foot deep channel for a distance of 1.0 mile. These improvements will allow full loading and increased vessel efficiencies. There would also be selected widenings for safety. The October 1985 estimated total project cost is $43,600,000. Consistent with the cost sharing and financing concepts agreed to by the

| Study | Total Estimate Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ |
| Arthur Kill Channel, Howland Hook Marine Terminal, (Deepening) NY & NJ | (Cont'd) | | | | |

Administration and the Senate majority leadership, local interests will be required to provide relocation of utilities, material disposal areas, bear all costs of terminal facilities, and dredging in berthing areas, presently estimated at $8,010,000; pay 25 percent of cost allocated to deep draft navigation during construction presently estimated at $10,900,000, and pay an additional 10 percent of costs allocated to deep draft navigation within a period of 30 years following completion. The annual transportation savings benefits of the recommended plan of improvement totals $18,800,000. The benefit cost ratio is 4.1 to 1 8-5/8 percent. Fiscal Year 1986 funds will be used to initiate planning and engineering studies. Fiscal Year 1987 funds will be used to continue the effort, including subsurface exploration and detailed design engineering. This continuation of planning and engineering effort is scheduled to be completed in September 1988.

| Study | Total Estimate Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| TOTAL NAVIGATION | 900,000 | 0 | 200,000 | 500,000 | 200,000 |

b. Flood Damage Prevention Studies: The amount of $1,925,000 is requested in Fiscal Year 1987 for the completion of 2 Flood Damage Prevention Planning and Engineering Studies and the continuation of 2 Flood Damage Prevention Planning and Engineering Studies.

NEW JERSEY

| Study | Total Estimate Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| Rahway River Basin Robinson's Branch at Rahway | 850,000 | 555,000 | 260,000 | 35,000 | 0 |

The study area is located in the City of Rahway in northeastern New Jersey in Union County along the Rahway River and lower Robinson's Branch in the Rahway River Basin. Major flooding in recent years has adversely affected many residential and commercial establishments. The plan of improvement being studied is one of two recommendations for flood control in the Feasibility Report for Robinson's Branch of the Rahway River Basin at Clark, Scotch Plains and Rahway, New Jersey. This report was submitted to Congress on 12 December 1978 and provides for channel modification along approximately 6,300 feet of Lower Robinson's Branch, in the City of

| Study | Total Estimate Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
|  | $ | $ | $ | $ | $ |

Rahway River Basin
Robinson's Branch at Rahway

Rahway, one bridge replacement, and levee and floodwall construction along sections of both lower Robinson's Branch and the Rahway River at their confluence. During review of the Feasibility Report it was determined that the project along the Robinson's Branch for the City of Rahway could be considered independently from the project for Clark and Scotch Plains. A reevaluation of the plan using current economic analysis procedures, and updated hydrology and hydraulic modeling techniques and corrected streams flows found the originally recommended plan to be economically unfeasible. A Reevaluation Report recommending a new plan for the City of Rahway was approved on 26 August 1985. This plan of improvement consists of 6,300 feet of gravel-lined channel modification, 3,600 feet of levees, construction of a set-back dike and stop-log structure and two ponding areas. These improvements will substantially reduce flood damages for approximately 20 commercial and industrial establishments, 150 residences, and associated developments. The October 1985 estimated total project cost is $5,100,000. Consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate majority leadership, local interests will be required to provide lands, easements, rights-of-way and relocation presently estimated at $550,000; pay 25 percent of costs allocated to flood control (less the $550,000) presently estimated at $730,000, and bear all costs of operation, maintenance and replacement of flood control facilities presently estimated at $25,000 annually. The average annual benefits are estimated at $849,600. The benefit cost ratio is 1.8 to 1 at 8-5/8 percent. With the funds provided in Fiscal Year 1986, detailed structural, foundation and hydraulic design will continue, along with public involvement and the preparation of an Environmental Assessment. With funds requested in Fiscal Year 1987 the real estate requirements will be determined, and the detailed design report will be completed. This continuation of planning engineering effort is scheduled to be completed in March 1987.

| Study | Total Estimate Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ |
| Ramapo and Mahwah Rivers at Mahwah, NJ and Suffern, NY | 470,000 | 50,000 | 250,000 | 170,000 | 0 |

The study area is located along the Ramapo and Mahwah Rivers in the Township of Mahwah, in northeastern New Jersey, and the Village of Suffern, in southeastern New York. Major flooding in recent years has adversely affected many residents and several commercial and industrial establishments. The plan of improvement recommended in the Interim Report on Flood Protection Feasibility for the Ramapo and Mahwah Rivers, was completed in December 1983. This report was prepared in partial compliance with Section 101(a) of the Water Resources Development Act of 1976 (PL 94-587) which authorized a Phase I Advanced Engineering and Design Study for the Passaic River Basin. The recommended plan for the Mahwah/Suffern area consists of channel modification along approximately 7,000 feet of the Ramapo River and approximately 5,000 feet of the Mahwah River, and construction of a new bridge. These improvements will substantially reduce flood damages for over 220 structures which are predominantly residential. Protection against a 100 year flood event would be provided to the major damage areas. The October 1985 estimated total project cost is $5,840,000. Consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate majority leadership, local interests will be required to provide lands, easements, rights-of-way and relocations, presently estimated at $1,315,000; pay 25 percent of costs allocated to flood control (less the $1,315,000), presently estimated at $145,000, and bear all costs of operation, maintenance and replacement of flood control facilities presently estimated at $16,800 annually. The total average annual benefits, all for urban flood damage protection are estimated at $856,100. The benefit-cost ratio is 1.6 to 1 at an 8-5/8 percent. With the funds provided for Fiscal year 1986, detailed planning and engineering studies will continue. This effort will include completion of the topographic mapping, collection of subsurface data, preparation of a cultural survey report, initiation of hydraulic design and coordination. With the funds requested in Fiscal Year 1987, the continuation of planning and engineering effort will be completed. This effort will consist of completing the project design and cost estimate, including the analysis of subsurface data, the structural stability analysis, determining real estate requirement, coordination and report preparation. This continuation of planning and engineering effort is scheduled for completion in September 1987.

| Study | Total Estimate Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ |
| Raritan River Basin, Green Brook Sub-Basin | 5,000,000 | 0 | 445,000 | 1,370,000 | 3,185,000 |

The Green Brook Sub-Basin study area is located within the Raritan River Basin in northcentral New Jersey in Middlesex, Somerset and Union counties. It drains approximately 65 square miles of primarily urban and industrialized area. On 28 August 1971 Hurricane Doria caused $22,200,000 in damages. Another major storm occurred on 2 August 1973 causing six deaths and resulting in $25,800,000 in damages. At October 1985 prices these damages would be $59,100,000 and $60,700,000, respectively. Hurricane Doria produced the maximum flood of record in the lower portion of the Green Brook Sub-Basin. The proposed improvements, as recommended, consist of approximately 15 miles of levees and floodwalls along Green Brook and its tributaries; 6 pumping stations; 12 bridge replacements; and approximately 3 miles of stream alignment. Non-structural and environmental features included in the plan are 9 property acquisitions, floodproofing of 33 structures and replanting of 75 to 100 acres in the project ponding areas. The State of New Jersey, the Green Brook Flood Control Commission and local communities support the recommended plan. The October 1985 estimated total project cost is $75,200,000. Consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate majority leadership, local interests will be required to provide lands, easements, rights-of-way, relocations, and pay 5 percent cash contribution, presently estimated at $24,500,000; and bear all costs of operation, maintenance and replacement of flood control facilities presently estimated at $169,000 annually. The average annual benefits are estimated at $10,811,000 of which $10,366,000 is for urban flood damage prevention and $445,000 is for advanced replacement of bridges. The benefit cost ratio is 1.6 to 1 at 8-5/8 percent. With funds provided in Fiscal Year 1986 the planning and engineering effort are being initiated. Fiscal Year 1987 funds will be used to continue the Planning and Engineering Studies. This continuation of planning and engineering effort is scheduled for completion in July 1990.

| Study | Total Estimate Federal Cost | Allocation Prior to FY 1985 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ |
| NEW YORK | | | | | |
| Westchester County Streams - Mamaroneck and Sheldrake Rivers at Mamaroneck | 2,640,000 | 1,405,000 | 800,000 | 350,000 | 85,000 |

The study area is located in the village of Mamaroneck in southeastern New York in Westchester County along the Mamaroneck and Sheldrake Rivers. Major flooding in recent years has adversely affected large portions of industrial, commercial and residential property. The plan of improvement being studied is one of three recommendations for flood control for Mamaroneck and Sheldrake Rivers Project included in the interim report on the Mamaroneck, Sheldrake and Byram River Basins. This plan on the Mamaroneck River provides for modifying approximately 10,000 feet of river channel, constructing about 3,700 feet of retaining walls, replacing four bridges, and building interior drainage works. On the Sheldrake River, modifications include a diversion tunnel about 3,000 feet in length from its inlet at Fenimore Road to the west basin of Mamaroneck Harbor, channel modification along approximately 2,700 feet, a retaining wall for about 1,700 feet, and a levee about 1,000 feet long. These improvements will substantially reduce flood damages for approximately 370 residences and 160 businesses which are located predominately in the Village of Mamaroneck. Damages of about $132,400,000 (October 1985 prices) from the 100 year frequency flood would be completely eliminated under the recommended plans. The October 1985 estimated total project cost is $53,500,000. Consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate majority leadership, local interests will be required to provide lands, easements, rights-of-way and relocations, presently estimated at $7,900,000; pay 25 percent of the costs allocated to flood control (less the $7,900,000), presently estimated at $5,500,000, and bear all costs of operation, maintenance and replacement of flood control facilities presently estimated at $53,400 annually. The average annual benefits are estimated at $5,126,200 of which $4,989,200 is for flood damage reduction and $137,000 is for advanced bridge replacement and road resurfacing. The benefit-cost ratio is 1.10 to 1 at 8-5/8 percent. With the funds provided in the Fiscal Year 1986, the detailed design of project features will be continued, the WES model study of the Sheldrake River diversion tunnel will be completed, and cost estimating procedures and real estate requirement efforts will be initiated. With the funds requested for Fiscal Year 1987, the detailed design of project features will continue, cost estimating procedures will be continued, and preparation of the General Design Memorandum will be initiated. This continuation of planning and engineering effort is scheduled for completion in April 1988.

| | | | | | |
|---|---|---|---|---|---|
| TOTAL FLOOD DAMAGE PREVENTION | 8,960,000 | 2,010,000 | 1,755,000 | 1,925,000 | 3,270,000 |

| Study | Total Estimate Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ |

c. Shoreline Protection: The amount of 1,400,000 is requested in Fiscal Year 1987 for the continuation of 2 Shoreline Protection Planning and Engineering Studies.

MARYLAND

| | | | | | |
|---|---|---|---|---|---|
| Atlantic Coast of Maryland and Assateague Island, Va | 1,800,000 | 0 | 200,000 | 500,000 | 1,100,000 |

The study area includes the Atlantic Coast of Maryland which is subject to both beach erosion and storm damage. The Ocean City portion of the shore with its highly developed recreation facilities, contributes greatly to the economy of the State. Major portions of Ocean City's beaches have been subjected to erosion which has averaged over two feet per year since 1850. This reach of shoreline is subject to severe damage from high tides and wave attack during major storms such as occurred in the northeast storm of March 1962 and the hurricane of August 1933. Damages to public and private property at Ocean City from Hurricane Gloria in September 1985 were estimated at $10,500,000. Severe beach erosion was also caused by the remnants of Hurricane Juan in November 1985. The plan of improvement recommended in the survey report completed in September 1980 included a combined beach erosion control and hurricane protection plan. The plan included widening and raising the existing beach about 7.6 miles from 8th Street to the Maryland-Delaware line, constructing a steel sheet pile bulkhead about 1.8 miles from North Division Street to the north end of the boardwalk, and constructing about 6.3 miles of sand dune from the north end of the boardwalk to the Maryland-Delaware line. This project which would have provided a beach 165 feet wide and 100-year storm protection for Ocean City was estimated to cost $34,200,000 (1 October 1985 prices) and had a benefit cost ratio of 2.2 to 1 at 8-5/8 percent. Based on its review of the report, the Office of Management and Budget determined in March 1984 that the proposed project should be a local responsibility since most of the benefits were recreational. In April 1985 the Governor of Maryland requested that the Corps consider implementing only the hurricane

| Study | Total Estimate Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ |
| Atlantic Coast of Maryland (Cont´d)<br>and Assateague Island, VA | | | | | |

protection portion of the survey report plan. The Governor indicated that the State would provide the 165-foot beach and, therefore, eliminated the need for the recreation component of the Corps´ plan. Since the State is providing the recreation beach at an estimated construction cost of $13,274,000 (October 1985 prices) and annual periodic maintenance cost of $1,170,000, the remaining need is for hurricane protection. The Corps´ hurricane protection project includes the bulkhead and sand dune with associated beach. The October 1985 estimated total project cost is $22,000,000. Consistent with the cost-sharing and financing concepts agreed to by the Administration and the Senate majority leadership, local interests will be required to pay 35 percent of the cost allocated to hurricane protection facilities, presently estimated at $7,700,000; and bear all costs of operation, maintenance and replacement of hurricane protection facilities presently estimated at $82,000 annually. Average annual benefits are estimated at $2,430,000 and the benefit cost ratio is 1.16 to 1 at 8-5/8 percent. Fiscal Year 1986 funds are being used to prepare a work plan and initiate subsurface exploration work, coastal hydraulic, environmental and numerical modeling studies. In Fiscal Year 1987 funds will be used to refine the recommended plan of improvement and project cost estimates. This will include surveys, subsurface exploration, economic, environmental and numerical modeling studies. This continuation of planning and engineering effort is scheduled for completion in September 1989.

| Study | Total Estimate Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ |
| VIRGINIA | | | | | |
| Virginia Beach | 2,200,000 | 0 | 800,000 | 900,000 | 500,000 |

The city of Virginia Beach is located on the eastern coast of Virginia bordered by the Atlantic Ocean on the east, Chesapeake Bay on the north and the cities of Norfolk, and Chesapeake on the West and North Carolina on the south. The study area comprises 28 miles of oceanfront and 10 miles of bayfront all within the city limits. The major problem along the Virginia Beach coastline is the vulnerability of portions of the beach and adjacent development to direct wave attacks during major storms and hurricanes. In March 1962, a severe northeast storm caused breaching and failing of bulkheads and dunes, and severe erosion along the beachfront. The intruding waters caused structural damage to buildings behind the bulkheads and dunes which resulted in damages of approximately $9,000,000 (March 1962 prices) to the Virginia Beach area. A recurrence of this storm would result in approximately $43,000,000 in damages based on October 1985 prices and conditions. The recommended plan of improvement consists of modifications of the existing Federal beach erosion project to provide for structural and non-structural improvements along a greater length of the beach. For the 6 mile reach of shoreline between Rudee Inlet to 89th Street, the beach would be maintained to elevation 5.4 feet NGVD. It would generally be 100 feet wide and then slope to the sea on a 1 to 20 slope. Between Rudee Inlet and 57th Street a new stepped face concrete wall would be constructed. The wall would have a top elevation of about 15.7 feet NGVD. In the segment between 57th Street and 89th Street, the existing dunes would be raised and strengthened. The crown width would be 25 feet wide at elevation 22.2 feet NGVD and would slope to the beach berm on a 1 to 5 slope. The city of Virginia Beach would be required to undertake all appropriate non-structural and related measures to help insure the preservation of the beachfill areas and dunes. The October 1985 estimated total project cost is $37,300,000. Consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate majority leadership, local interests will be required to provide lands, easements, rights-of-way, relocations, presently estimated at $225,000; pay 35 percent of the costs allocated to storm damage prevention (less the 225,000), presently estimated at $12,875,000; bear all costs of Periodic Nourishment over 50 years, presently estimated at $436,000 annually; and provide all costs of operation, maintenance and replacement of storm damage prevention facilities presently estimated at $373,000 annually. Average annual benefits, all storm damage prevention benefits, are estimated at $7,483,000 (October 1985 prices) and the benefit ratio is 1.8 to 1 at 8-5/8 percent. Fiscal Year 1986 funds are being used to initiate Planning and Engineering studies including all physical elements of the design such as surveys, geotechnical investigations and wave dynamics reevaluations. Fiscal Year 1987 funds will be used to complete all planning studies and physical elements of the design and develop final designs. This continuation of planning and engineering effort is scheduled for completion in September 1988.

| Study | Total Estimate Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| TOTAL SHORELINE PROTECTION | 4,000,000 | 0 | 1,000,000 | 1,400,000 | 1,600,000 |

| Study | Total Estimate Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ |

d. Special Studies: None

e. Comprehensive Studies: The amount of $540,000 is requested in Fiscal Year 1987 for the continuation of 1 Comprehensive Planning and Engineering Study.

PENNSYLVANIA

| | | | | | |
|---|---|---|---|---|---|
| Susquehanna Basin at Harrisburg | 2,900,000 | 1,618,000 | 550,000 | 540,000 | 192,000 |

The study area, which is located in the city of Harrisburg, the capital of the Commonwealth of Pennsylvania, is subject to flooding from both the Susquehanna River and Paxton Creek. Due to increased urbanization, flooding from Paxton Creek along the industrial corridor of Harrisburg is now a perennial problem. The Harrisburg industrial area is also subject to backwater flooding from the Susquehanna River. Records kept since 1784 indicate Harrisburg has been flooded 39 times from the Susquehanna River. In June 1972 Tropical Storm Agnes caused the flood of record in Harrisburg on both the Susquehanna River and Paxton Creek. First, Paxton Creek flooded and placed an average of eight feet of water on the entire business district along Cameron Street, then flooding from the Susquehanna River inundated the same area to a depth of about 11 feet. Damages in this area at that time exceeded $55,000,000. A recurrence of Agnes today would cause an estimated $129,000,000 (October 1985 prices) in damages. The plan of improvement included in an interim report on the Susquehanna River Basin study recommends a flood control project for the South Harrisburg-Paxton Creek area. The detention reservoir along Asylum Run (a small tributary of Paxton Creek), an enlarged earth and concrete channel for Paxton Creek about four miles long, and minor recreation, fish and wildlife facilities. The proposed project would provide protection against a discharge equal to a recurrence of the Agnes flood on the Susquehanna River and the 100-year flood on Paxton Creek. The October 1985 estimated total project cost is $133,000,000. Consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate majority leadership, local interests will be required to provide lands, easements, rights-of-way and relocations, presently estimated at $23,345,000; pay 25 percent of the costs allocated to flood control (less the $23,345,000), presently estimated at $9,830,000; pay one-half of the separable and joint costs allocated to recreation, presently estimated at $155,000; and bear all costs of operation, maintenance and replacement of flood control facilities presently estimated at $131,000 annually. The benefits for the recommended plan

| Study | Total Estimate Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ |
| Susquehanna Basin at Harrisburg (Cont´d) | | | | | |

have decreased and the project is being reformulated to identify the most feasible plan. Fiscal Year 1985 funds were used to evaluate the ability of the local sponsor to finance its share of project costs. The evaluation found that the local sponsor, the city of Harrisburg, has the ability to finance its share of the project costs consistent with higher levels of cost sharing now being considered by the Administration and the Congress. The city has also provided a letter of support dated 29 August 1985 which indicates its intent to increase its financial participation in the project. Fiscal Year 1986 funds are being used to complete project reformulation, essentially complete foundation and materials and hydrologic and hydraulic studies, and continue public involvement, economic and environmental studies. Funds requested for Fiscal Year 1987 will be used to continue economic and environmental studies, public involvement and to initiate detailed project design. This continuation of planning and engineering effort is being scheduled for completion in September 1988 in lieu of August 1987.

| | | | | | |
|---|---|---|---|---|---|
| TOTAL COMPREHENSIVE | 2,900,000 | 1,618,000 | 550,000 | 540,000 | 192,000 |

| Study | Total Estimate Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ |
| f. Project Review Studies: | None | | | | |
| GRAND TOTAL SURVEYS - CONTINUATION OF PLANNING AND ENGINEERING | 16,760,000 | 3,628,000 | 3,505,000 | 4,365,000 | 5,262,000 |

4. PHASE I STAGE OF ADVANCE ENGINEERING - NEW: NONE

5. PHASE I STAGE OF ADVANCE ENGINEERING - CONTINUING

a. Navigation: None

b. Flood Damage Prevention: The amount of $2,200,000 is requested in Fiscal Year 1987 for the continuation of 1 Phase I Study.

NEW JERSEY

| | | | | | |
|---|---|---|---|---|---|
| Passaic River Basin, NJ & NY | 21,000,000 | 16,021,000 | 1,700,000 | 2,200,000 | 1,079,000 |

Phase I studies were authorized in Section 101(a) of the Water Resources Development Act of 1976 in accordance with the report of the Chief of Engineers, dated 18 February 1976. The October 1985 estimated cost of the plan in the survey report is $1,480,000,000. The purpose of the Phase I Study is to determine the feasibility of improvements for flood protection, water supply, navigation, hurricane protection and recreation. The previously recommended plan consisted of a flood detention reservoir, channel diversion and modifications, levees and floodwalls and streambank filling and grading. These works would provide protection against a storm with a recurrence interval of 235 years which is 20 percent larger than the October 1903 flood of record. Six independent local protection plans were also recommended. The House Public Works Committee Report on the Water Resources Development Act of 1976 mandates that the following alternatives or any combination thereof, shall be the only ones surveyed and considered because of the local opposition to any plan which relies upon extensive use of dikes, dams, and levees, such as those proposed in previous survey reports:

| Study | Total Estimate Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ |

Passaic River Basin, NJ & NY (Cont'd)

1. A full range of nonstructural flood control alternatives to include land acquisition, floodplain mapping, floodproofing, developing early warning systems and relocation of buildings.

2. A tunnel diversion plan.

3. A system of tunnels addressing the needs of the entire basin.

4. Plans that combine local protection works where locally acceptable and nonstructural solutions including improvements to stream carrying capacity in accordance with different needs in the Lower Basin and in the Central Basin.

5. Evaluation of fulfilling water supply objectives together with flood control.

6. Aquifer recharge and underground storage.

7. Reservoir management in the headwaters.

The 1976 Survey Report identified six independent local protection plans, or sub-study areas, for further study. Studies to date have found that for one of these areas there is no Federal interest in construction. Four areas have been recommended for Federal projects. The study for the last area, Rockaway River, has been expanded to include more detailed study of Longwood Valley in response to a 2 November 1983 Resolution of the Senate Committee on Environmental and Public Works.

The mainstem alternatives are being developed to protect over 48,000 structures in the critical flood problem area. The most severe recent flood occurred in April 1984, claiming 2 lives with damages estimated at $330,000,000 (October 1985 prices). The entire Basin, or portions thereof, was declared a disaster area in 1968, 1971, 1972, 1973, twice in 1975 and in 1984. Severe localized flooding has also occurred in November 1977, January 1979, March - April 1983 and December 1983. The recurrence of the October 1903 flood of record would cause damages of $1,660,000,000 (October 1985 prices). The May 1968 flood claimed 6 lives and caused an estimated $76,000,000 (October 1985 prices) in damages.

| Study | Total Estimate Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
|  | $ | $ | $ | $ | $ |

Passaic River, NJ & NY (Cont'd)

Five interims have been completed, four of which recommended independent local protection projects. The Mahwah-Suffern interim recommended a 100 year channel modification plan at a total cost of $5,840,000 (October 1985 prices). The plan consists of 12,000 feet of channel modification along the Ramapo and Mahwah Rivers and has a benefit to cost ratio of 1.6 to 1 at 8-5/8 percent.

The Saddle River Subbasin interim recommended a 150 year channel modification project consisting of 6.9 miles of channel modification along the Saddle River and Sprout Brook with a total cost of $38,700,000 (October 1985 prices) and a benefit to cost ratio of 1.7 to 1 at 8-5/8 percent.

For Ramapo River at Oakland, NJ, the recommendation is for a 40 year plan of protection at a cost of $6,600,000 (October 1985 prices). The plan consists of 6,800 feet of channel modification along the Ramapo River in conjunction with modifications to the Pompton Lake Dam. The benefit to cost ratio of the plan is 1.3 to 1 at 8-5/8 percent.

For Molly Ann's Brook, the recommendation is for a 50 year channel modification plan at a total cost of $21,900,000 (October 1985 prices). The plan consists of 2.8 miles of channel modification along Molly Ann's Brook, the replacement of 10 bridges over the brook and the removal of 1 building under which the brook currently flows through undersized culverts. The benefit to cost ratio of this plan is 1.1 to 1 at 8-5/8 percent.

The Flood Forecasting and Warning System Interim recommended improvements be implemented under the Small Projects Authority in order to improve the timeliness, accuracy and reliability of floodwarnings throughout the Passaic River Basin. The recommended plan consists of floodwarning equipment including an increase and automation of precipitation and streamflow gages, and improved computer facilities, and has a benefit to cost ratio of 5.8 to 1 at 8-5/8 percent.

For the Preservation of Natural Storage study, the recommendation was for no interim action, but for further consideration in conjunction with the overall Phase I study for the Passaic River mainstem.

| Study | Total Estimate Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ |
| Passaic River, NJ & NY (Cont'd) | | | | | |

Fiscal Year 1986 funds are being used to: continue the development of detailed plans for flood control on the mainstem, including studies for the Third River in Belleville, Bloomfield, Clifton and Nutley, NJ; continue the interim study for the Rockaway River Subbasin; and continue the Clearing and Snagging sub-study. Funds requested for Fiscal Year 1987 will be used to complete the development of detailed plans for the mainstem; and continue the Rockaway River, and the Clearing and Snagging studies. The Third River study previously scheduled for completion in June 1986 has been combined with the mainstem at the request of the State of New Jersey. The mainstem report will be completed in September 1987; the Rockaway River Subbasin study in March 1988; and the final report, to include the Clearing and Snagging study, in September 1988.

| | | | | | |
|---|---|---|---|---|---|
| TOTAL - FLOOD DAMAGE | 21,000,000 | 16,021,000 | 1,700,000 | 2,200,000 | 1,079,000 |

| Study | Total Estimate Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ |
| c. Shoreline Protection: None | | | | | |
| d. Multiple Purpose Power: None | | | | | |
| GRAND TOTAL PHASE I STAGE OF ADVANCE ENGINEERING CONTINUING | 21,000,000 | 16,021,000 | 1,700,000 | 2,200,000 | 1,079,000 |

6. PHASE I STAGE OF ADVANCE ENGINEERING AND DESIGN - CONTINUATION OF PLANNING AND ENGINEERING STUDIES

a. Navigation: None

b. Flood Damage Prevention: The amount of $1,800,000 is requested in Fiscal Year 1987 for the continuation of 2 Flood Damage Prevention Planning Engineering Studies.

| | | | | | |
|---|---|---|---|---|---|
| PENNSYLANIA | | | | | |
| Lock Haven | 2,315,000 | 1,100,000 | 725,000 | 200,000 | 290,000 |

The study area, which is located in the City of Lock Haven and Castanea and Woodward Townships, Pennsylvania, is situated in Clinton County on the right bank of the West Branch Susquehanna River, 194 miles above the mouth of the Susquehanna River. The Lock Haven flood plain is subject to flooding from the West Branch Susquehanna River and Bald Eagle Creek. The flood of record in March 1936 caused approximately $3,500,000 in damages to the Lock Haven area. Under present conditions, a recurrence of this flood without the project would cause an estimated $136,000,000 (October 1985 prices) in damages. Damages in the project area as a result of Tropical Storm Agnes in June 1972 were approximately $50,700,000. A recurrence of Agnes would cause

| Study | Total Estimate Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
|  | $ | $ | $ | $ | $ |

Lock Haven (Cont'd)

an estimated $111,000,000 (October 1985 prices) in damages. The most recent significant flooding in Lock Haven occurred during Eloise in September 1975, which resulted in flood damage to an estimated 600 homes. A recurrence of Eloise today would cause an estimated $1,600,000 (October 1985 prices) in damages. Since 1847 the flood stage has been exceeded twenty times. The project was authorized for Phase I studies in Section 101(a) of the Water Resources Development Act of 1976. The plan of improvement recommended by the Assistant Secretary of the Army (Civil Works), based on the Phase I study, would provide protection against a regional storm with a magnitude of the March 1936 flood with a flow of 238,000 cubic feet per second on the West Branch and 66,200 cubic feet per second on Bald Eagle Creek. The recommended improvements include 24,500 feet of levee, 6,500 feet of floodwall, eight closure structures, four pumping stations, diversion of Lusk Run, and minor recreation facilities. The October 1985 estimated total project cost is $68,000,000. Consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate majority leadership, local interests will be required to provide lands, easements, rights-of-way, and relocations, presently estimated at $7,980,000, pay 25 percent of the costs allocated to flood control (less the $7,980,000) presently estimated at $8,960,000; pay one-half of the separable and joint costs allocated to recreation, presently estimated at $120,000; and bear all costs of operation, maintenance and replacement of flood control and recreation facilities presently estimated at $73,000 annually. Average annual benefits are estimated at $6,213,000 and the benefit cost ratio is 1.11 to 1 at 8-5/8 percent. Fiscal Year 1986 funds are being used to continue hydrologic and hydraulic studies, foundation and materials investigations, economic and environmental studies, and project design. Funds requested for Fiscal Year 1987 will be used to continue the hydrologic and hydraulic studies, foundation and materials investigations, economic and environmental studies, and project design. The study cost estimate has been increased by $290,000 to conduct investigations of alternative project alignments which will result in considerable construction savings. This continuation of planning and engineering effort is scheduled for completion in May 1988 in lieu of January 1987.

| Study | Total Estimate Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ |
| Wyoming Valley (Levee Raising) | 5,700,000 | 305,000 | 500,000 | 1,600,000 | 3,295,000 |

Wyoming Valley is located in northeastern Pennsylvania and extends from Duryea on the Lackawanna River, southwestward to Nanticoke on the Susquehanna River. The study area includes four existing Federal Local protection projects in Plymouth, Kingston-Edwardsville, Swoyersville-Forty Fort, and Wilkes-Barre and Hanover Township. The four existing projects function as a system and provide protection against a design discharge of 232,000 cubic feet per second. The discharge of 345,000 cubic feet per second during June 1972 (Storm Agnes) without the now completed Cowanesque and Tioga-Hammond Lakes projects in operation overtopped the protection and resulted in the greatest flood of record with damages of $730,000,000. A recurrence of Storm Agnes would result in damages of $1,500,000,000 (October 1985 prices). The project was authorized for Phase I studies in Section 101(a) of the Water Resources Development Act of 1976. The plan of improvement included in the report on the Phase I study recommends raising of the existing system to provide protection against flood flows of 343,000 cubic feet per second which would be caused by a regional storm with the magnitude of Storm Agnes. The plan consists of raising the existing levees and floodwalls between five and seven feet, modifying closure structures, relocating utilities, and providing some new floodwalls and levees to maintain the system's integrity. The plan also includes raising five other local protection projects, removing an abandoned railroad bridge, and providing non-structural measures to mitigate any significant induced damages and to reduce the potential of a catastrophic failure of an existing project. The October 1985 estimated total project cost is $233,100,000. Consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate majority leadership, local interests will be required to provide lands, easements, rights-of-way, and relocations, presently estimated at $4,420,000, pay 25 percent of the costs allocated to flood control (less the $4,420,000) presently estimated at $53,520,000; pay one-half of the separable and joint costs allocated to recreation, presently estimated at $680,000; and bear all costs of operation, maintenance and replacement of flood control and recreation facilities presently estimated at $159,000 annually. Average annual benefits are estimated at $22,022,000 and the benefit cost ratio is 1.16 to 1 at 8-5/8 percent. Continuation of Planning and Engineering studies were initiated in September 1984 with $35,000 allocated from the 1984 Supplemental Appropriations Act (P.L. 98-396). These funds were used to evaluate the ability of the local sponsors to finance their share of project costs. The evaluation found that the local sponsors, the Commonwealth of Pennsylvania and Luzerne County, have the ability to finance their share of project costs consistent with higher levels of cost sharing now being considered by the

| Study | Total Estimate Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ |

Wyoming Valley (Levee Raising) (Cont´d)

Administration and the Congress. Both the Commonwealth of Pennyslvania and Luzerne County have provided recent letters of support indicating their intent to increase their financial participation in the project. Fiscal Year 1986 funds are being used to complete the work plan, continue surveying and mapping and public involvement, and initiation foundation and materials investigations, economic and environmental studies, and hydrologic and hydraulic studies. Funds requested for Fiscal Year 1987 will be used to continue refinement of the recommended plan of improvement and project cost estimates. This will include surveying and mapping, foundation and materials studies, economic and environmental studies, hydrologic and hydraulic studies and project design. This continuation of planning and engineering effort is scheduled for completion in September 1989.

| | | | | | |
|---|---|---|---|---|---|
| TOTAL FLOOD DAMAGE PREVENTION | 8,015,000 | 1,405,000 | 1,225,000 | 1,800,000 | 3,585,000 |

c. Shoreline Protection: None

d. Multiple Purpose Power: None

| | | | | | |
|---|---|---|---|---|---|
| GRAND TOTAL - PHASE I STAGE OF ADVANCE ENGINEERING AND DESIGN - CONTINUATION OF PLANNING AND ENGINEERING | 8,015,000 | 1,405,000 | 1,225,000 | 1,800,000 | 3,585,000 |
| GRAND TOTAL - SURVEYS AND PHASE I STAGE OF ADVANCE ENGINEERING AND DESIGN | 61,244,000 | 30,898,000 | 8,280,000 | 10,210,000 | 11,856,000 |

APPROPRIATION TITLE: General Investigations - Advanced Engineering and Design - Channels and Harbors (Navigation)

PROJECT: Shinnecock Inlet, New York (Continuation of Planning)

LOCATION AND DESCRIPTION: Shinnecock Inlet is a narrow opening through the barrier beach in Suffolk County on Long Island, New York. The inlet is 95 miles east of the Battery in New York City. The project provides for an entrance channel 10 feet deep and 200 feet wide from the Atlantic Ocean to Shinnecock Bay, and from there an inner channel 6 feet deep and 100 feet wide to the Long Island Intracoastal Waterway. It also provides for rehabilitation of existing jetties and revetments, a seaward extension of both east and west jetties, and sand by-passing facilities.

AUTHORIZATION: River and Harbor Act of July 1960 (PL 86-645), modified by the FY 1983 Supplemental Appropriation Act (PL 98-63).

BENEFIT TO COST RATIO: The benefit - cost ratio for this project is 1.4 to 1 at 8 5/8 percent interest and a 50 year project life.

SUMMARIZED FINANCIAL DATA

| | | | | |
|---|---|---|---|---|
| Estimated Federal Cost | | $ 8,500,000 | Preconstruction Planning Estimate | $1,000,000 |
| (Corps of Engineers) | $ 8,370,000 | | Allocations to 30 September 1985 | 555,000 |
| (U.S. Coast Guard) | 130,000 | | Conference Allowance for FY 1986 | 200,000 |
| Estimated Non-Federal Cost | | 9,730,000 | Allocation for FY 1986 | 200,000 |
| Cash Contribution | 9,730,000 | | Planning Allocation for 1987 | 200,000 |
| Other Cost | 0 | | | |
| Total Estimated Project Cost | | $18,230,000 | Balance to Complete Preconstruction Planning After FY 1987 | 45,000 |

JUSTIFICATION: Shinnecock Bay, and adjacent ocean area, constitute an important marine fishery. It is part of the Long Island resort region, which affords recreation to hundreds of thousands of people participating in fishing, pleasure boating, and bathing. Many hotels and tourists' homes are located in the area, as well as yacht clubs, boat yards, public wharves and landings, and numerous private landings. Safe access to the ocean is desired for commercial fishing and recreation craft, but is presently hindered by the presence of an offshore sandbar. The recommended entrance and interior channels would improve access to the ocean for the fleets. Improved tidal exchange through the inlet could reduce pollution and increase shellfish production.

Providing sand bypassing facilities would: aid in controlling beach erosion, save valuable land from destruction, and stimulate recreational beach use. Fish and shellfish constitute the present and prospective commerce, which depends primarily upon the navigable condition of the channel. In 1984, the total amount of fish landed at the Shinnecock commercial fisheries was nearly 5000 tons (NMFS, 1984). Other benefits include stimulation of recreational boating and sport fishing, access to harbors of refuge, and reduction of vessel damage.

| Benefits | Amount |
|---|---|
| Beach Erosion | $1,093,700 |
| Commercial Fishing | 1,410,200 |
| Recreational Boating | 535,700 |
| General Recreation | 440,600 |
| Total | $3,476,200 |

NON-FEDERAL COSTS: Consistent with the cost-sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, local interests will be required to provide lands, easements, rights-of-way, and required disposal areas; pay one-half of the separable and joint costs allocated to recreation, and pay 20 percent of the costs allocated to shallow draft navigation during construction for a total cost of $9,730,000.

STATUS OF LOCAL COOPERATION: The New York State Department of Environmental Conservation by letter dated 7 September 1983 expressed their intent to provide required items of local cooperation.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $8,500,000 is a decrease of $2,700,000 from the latest estimate ($11,200,000) submitted to Congress (FY 1985). The change is due to a decrease of $3,000,000 based on cost-sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership offset by an increase of $300,000 for price level.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The Environmental Impact Statement will continue with the funds in FY 1986 and will be completed in September 1987. The provisions of Section 404 of the Clean Water Act are scheduled to be met by a Section 404(b)(1) Evaluation in the 4th quarter of FY 87, a Public Notice issued in the 4th quarter of FY 87, a Certification from the State of New York in the 4th quarter of FY 87, and the District Commander's signature on the GDM report in the 4th quarter of FY 87.

OTHER INFORMATION: Funds to initiate planning were appropriated in FY 1984. Preconstruction planning is tentatively scheduled to be completed in June 1988. From April to June 1984 the Corps dredge "Currituck" removed approximately 162,000 cubic yards of material from within Shinnecock Inlet and seaward of it. This emergency action, done under the authority of Section 3 of the 1945 River and Harbor Act was designed to provide emergency and temporary relief from a sand bar which had been impeding vessel traffic through the Inlet.

## HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

**Division:** North Atlantic **Project:** Shinnecock Inlet, New York

**District:** New York

Estimates Presented to Congress ($1,000)

| Item | Original Baseline | Cumulative Changes | Last | Incremental Change | Current |
|---|---|---|---|---|---|
| Federal Cost<br>(Price Level) | 10,420<br>(Oct 82) |  | 11,200 |  | 8,500 |
| Reason for change |  | (780) |  | (-2,700) |  |
| a. Price Escalation (Construction Features) |  | 780 |  | 300 |  |
| b. Design Changes |  | 0 |  | 0 |  |
| c. Additional Functions Added Under General Authority |  | 0 |  | 0 |  |
| d. Authorized Modifications |  | 0 |  | 0 |  |
| e. Post-Contract Award and Other Estimating Adjustments |  | 0 |  | 0 |  |
| f. Schedule Changes |  | 0 |  | 0 |  |
| g. Sundry |  | 0 |  | -3,000 1/ |  |
| h. Price Escalation (Real Estate) |  | 0 |  | 0 |  |

1/ Based on cost-sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership

APPROPRIATION TITLE: General Investigations - Advance Engineering and Design - Local Protection (Flood Control)

PROJECT: Washington, DC and Vicinity (Continuation of Planning)

LOCATION AND DESCRIPTION: The existing project is located in the District of Columbia and provides protection against flooding from the Potomac and Anacostia Rivers. The project modification, as authorized, provides for raising the grade of a portion of P Street, filling an area near the Lincoln Memorial (along 23rd Street), regrading the area adjacent to 17th Street and constructing a removable closure structure across 17th Street. These measures were authorized to restore the design level of protection and reduce the need for emergency closure in the event of a flood.

AUTHORIZATION: Flood Control Act of 1946

BENEFIT-COST RATIO: The benefit to cost ratio is 2.6 to 1 at 8-5/8 percent. The benefit-to-cost ratio is based on the project functioning independently.

SUMMARIZED FINANCIAL DATA

| | | | | |
|---|---|---|---|---|
| Estimated Federal Cost (Corps of Engineers) | | $11,000,000 | Preconstruction Planning Estimate | $2,000,000 |
| Estimated Federal Cost (Other) | | 280,000 | Allocations to 30 September 1985 | 0 |
| Estimated Non-Federal Cost: | | 0 | Conference Allowance for FY 1986 | 180,000 |
| Cash Contributions | $ 0 | | Allocation for FY 1986 | 180,000 |
| Other Costs | 0 | | Planning Allocation for FY 1987 | 485,000 |
| Total Estimated Project Cost | | $11,280,000 | Balance to Complete Preconstruction Planning After FY 1987 | 1,335,000 |

JUSTIFICATION: Flooding on the Potomac River at Washington, DC is affected by both tidal flooding from the Chesapeake Bay and the flood flows on the Potomac River upstream from Washington, DC. Flooding in March 1936 led to estimated damages of $5,300,000 (at 1 October 1985 prices) in Washington, DC and the loss of two lives. This damage estimate is based on development existing at the time of the flood. The project authorized by the Flood Control Act of 1936, primarily consisted of: a wall and levee 2300 feet long at Potomac Park between the Lincoln Memorial and the Washington Monument with a gap to accommodate an emergency closure structure, and raising a section of P Street, all to protect the downtown Washington area; and a wall and levee 12,900 feet long to protect the Anacostia Naval Air Station and Bolling Air Force Base. The project, which was placed in operation in 1940, was constructed to protect

Division: North Atlantic

District: Baltimore

Region: Middle Atlantic
Washington DC and Vicinity

**JUSTIFICATION** (Cont'd)

against a flood discharge of 700,000 cubic feet per second on the Potomac River. Subsequent to project completion, settlement of P Street occurred and construction in Potomac Park increased the gap in the protection. Due to the experience of the 1942 flood, the Flood Control Act of 1946 authorized improvements to restore the design level of protection and improve the operation of the project. The total effectiveness of the project depends on implementation of the improvements authorized in 1946. At present, project operation continues to require implementation of emergency measures such that the ability of the project to provide the design level of protection is questionable. A review of the improvements for possible deauthorization indicated that the improvements were still warranted in view of the potential for severe flood damages to the numerous Federal government office buildings, national landmarks, museums, and commercial and residential properties that would be affected. The average annual benefits, all flood control, are $2,725,000 based on 1 October 1985 prices.

**NON-FEDERAL COSTS:** None required at this time. The General Design Memorandum will determine what, if any, project costs are the responsibility of the District of Columbia.

**STATUS OF LOCAL COOPERATION:** The local assurers for the existing project are the District of Columbia and four Federal agencies: the National Park Service for the Potomac Park portion of the project; and the U.S. Navy, U.S. Air Force, Architect of the Capitol and National Park Service for the Anacostia River portion of the project. The specific local assurers for the project modification are being determined during preparation of the General Design Memorandum.

**COMPARISON OF FEDERAL COST ESTIMATES:** The current Federal (Corps of Engineers) cost estimate of $11,000,000 is the initial estimate being presented to Congress.

**STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH THE CLEAN WATER ACT:** An Environmental Assessment will be prepared and incorporated in the General Design Memorandum. The provisions of Section 404 of the Clean Water Act do not apply since the proposed improvements do not involve the placement of fill material or the discharge of dredge material into the waters of the United States.

**OTHER INFORMATION:** Funds to initiate planning were appropriated in FY 1986. Preconstruction planning is scheduled to be completed in September 1990.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: North Atlantic
District: Baltimore

Project: Washington, DC and Vicinity

| Item | Original Baseline | Cumulative Changes | Last | Incremental Change | Current |
|---|---|---|---|---|---|
| | Estimates Presented to Congress ($1,000) | | | | |
| Federal Cost<br>(Price Level) | 11,000<br>(Oct 1985) | | 11,000 | | 11,000 |
| Reason For Changes | | ( 0) | | ( 0) | |
| a. Price Escalation (Construction Features) | | 0 | | 0 | |
| b. Design Changes | | 0 | | 0 | |
| c. Additional Functions Added Under General Authority | | 0 | | 0 | |
| d. Authorized Modifications | | 0 | | 0 | |
| e. Post-Contract Award and Other Estimating Adjustments | | 0 | | 0 | |
| f. Schedule Changes | | 0 | | 0 | |
| g. Sundry | | 0 | | 0 | |
| h. Price Escalation (Real Estate) | | 0 | | 0 | |

APPROPRIATION TITLE: General Investigations, Advance Engineering Design - Local Protection (Flood Control)

PROJECT: Saw Mill River at Elmsford and Greenburgh, New York (Continuation of Planning)

LOCATION AND DESCRIPTION: The project is located on the Saw Mill River approximately 9 miles upstream from the junction of the Saw Mill and Hudson Rivers. It is in the Village of Elmsford and the Town of Greenburgh, Westchester County, New York. Flood protection will be provided by means of 16,125 feet of channel improvement.

AUTHORIZATION: Authorized June 1976 under the provisions of Section 201 of the Flood Control Act of 1965.

BENEFIT TO COST RATIO: The benefit - cost ratio for this project is 1.2 to 1 at 8-5/8 percent interest and a 100 year project life.

| | | |
|---|---|---|
| Estimated Federal Cost | | $4,500,000 |
| Estimated Non-Federal Cost | | 1,500,000 |
| Cash Contribution | 1,080,000 | |
| Other Costs | 420,000 | |
| Total Estimated Project Cost | | 6,000,000 |

SUMMARIZED FINANCIAL DATA

| | |
|---|---|
| Preconstruction Planning Estimate | $950,000 |
| Allocations to 30 September 1985 | 590,000 |
| Conference Allowance for FY 1986 | 200,000 |
| Allocation for FY 1986 | 200,000 |
| Planning Allocation for FY 1987 | 50,000 |
| Balance to Complete Preconstruction Planning after FY 1987 | 110,000 |

JUSTIFICATION: Flooding by the Saw Mill River has been frequent, causing severe damages to residential, commercial, and industrial property in the area. The April 1984 flood caused damages estimated at $2,007,000 (October 1985 price levels). Other serious floods occured in August 1976, September 1975, September 1974 and June 1972. The reformulated plan would protect the upstream reach against a 33 year flood, the middle reach against a 100 year flood, and the downstream reach (Babbitt Court) against a 50 year flood. The area was declared a disaster area due to floods in June 1972, September 1975, and April 1984. Average annual flood control benefits of $819,200 will result from construction of this project.

**NON-FEDERAL COST:** Consistent with the cost-sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, local interests will be required to provide lands, easements, rights-of-way, and required disposal areas, presently estimated at $90,000; modify or relocate bridges, utilities, roads, and other facilities, where necessary in the construction of the project, presently estimated at $330,000, plus a cash contribution, presently estimated at $1,080,000 sufficient to bring the local cost share to 25 percent of the costs allocated to flood control, and bear all costs of operations, maintenance, and replacement of flood control facilities presently estimated at $33,300 annually.

**STATUS OF LOCAL COOPERATION:** A letter from the New York State Department of Environmental Conservation (NYSDEC) dated 12 June 1974 indicated the State's interest and willingness to comply with the items of local cooperation and requested that the Corps continue planning activities for this proposed project. The authorized project is now being reformulated and a letter from NYSDEC dated 6 September 1985 indicated the State's support for the recommended plan.

**COMPARISON OF FEDERAL COST ESTIMATE:** The current Federal Cost estimate of $4,500,000 is a decrease of $1,990,000 from the latest estimate ($6,490,000) submitted to Congress (FY 1986). The change includes an increase of $373,000 for price level; offset by decreases of $1,283,000 based on the approved Reformulation Study partly and decrease of $1,080,000 based on cost-sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership.

**STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT:** The final environmental impact statement was filed with CEQ on 20 April 1976, and an addendum was filed on 15 October 1976. The provisions of Section 404 of the Clean Water Act have been met by a Section 404(b)(1) Evaluation (21 June 1985), a Public Notice and the District Engineer's signature (September 1985). By letter dated 6 December 1979, the New York State Department of Environmental Conservation waived a water quality certificate. A draft Supplemental Environmental Impact Statement along with a Section 404(b)(1) Evaluation Report were included in the December 1984 Draft Phase I GDM.

**OTHER INFORMATION:** Funds to initiate planning were appropriated in FY 1977. Planning accomplished to date indicates that the authorized plan, which consisted of channels levees and floodwalls, and pumping plant, is no longer economically justified. A revised plan consisting of channel improvement is being considered.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: North Atlantic
District: New York

Project: SAW MILL RIVER AT ELMSFORD AND GREENBURGH, N.Y.

| Item | Original Baseline (1) | Estimates Presented to Congress ($1,000)<br>Cumulative Changes (2) | Last (3) | Incremental Change (4) | Current (5) |
|---|---|---|---|---|---|
| Federal Cost<br>(Price Level) | 3,120<br>(Oct'75) | | 6,490 | | 4,500 |
| Reason for Change | | (3,370) | | (-1,990) | |
| a. Price Escalation (Construction Features) | | 3,055 | | 373 | |
| b. Design Changes | | 0 | | -1,283 3/ | |
| c. Additional Function Added Under General Authority | | 0 | | 0 | |
| d. Authorized Modifications | | 0 | | 0 | |
| e. Post-Contract Award and Other Estimating Adjustments | | 295 1/ | | | |
| f. Schedule Changes | | 0 | | 0 | |
| g. Sundry | | 20 2/ | | -1,080 4/ | |
| h. Price Escalation (Real Estate) | | 0 | | 0 | |

1/ $250,000 for reevaluation of E & D and S & A requirements; and $45,000 for Fish and Wildlife coordination costs.
2/ Reevaluation of government costs based on current overhead rates.
3/ Based on the change in project approved draft reformulation of General Design Memorandum.
4/ Based on the cost-sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership.

APPROPRIATION TITLE: General Investigations - Advance Engineering and Design - Reservoir (Flood Control)

PROJECT: Prompton Lake, Pennsylvania - Modification - (Continuation of Planning)

LOCATION AND DESCRIPTION: The dam is located on the Lackawaxen River in Wayne County, approximately 4 miles above Honesdale, Pennsylvania and approximately 30 miles from the confluence of the Lackawaxen and Delaware Rivers. The existing single purpose (flood control) project will be modified by adding water supply and recreation purposes.

AUTHORIZATION: Flood Control Act of 1962.

BENEFIT-COST RATIO: The benefit-cost ratio is 1.9 to 1 at 8 5/8%. The benefit-cost ratio is based on the water supply and recreation benefits the modification would provide independently of the flood control benefits obtained from the existing project.

SUMMARIZED FINANCIAL DATA

| | | | | |
|---|---|---|---|---|
| Estimated Total Appropriation Requirement | | $ 40,700,000 | Preconstruction Planning Estimate | $3,600,000 |
| Estimated Non-Federal Reimbursement | | $ 38,100,000 | Allocations to 30 September 1985 | 270,000 |
| Estimated Federal Cost (Ultimate) | | $ 2,600,000 | Conference Allowance for FY 1986 | 400,000 |
| Estimated Non-Federal Cost: | | $ 40,700,000 | Allocation for FY 1986 | 400,000 |
| Cash Contributions | $ 2,600,000 | | Planning Allocation for FY 1987 | $1,000,000 |
| Other Costs | $ 38,100,000 | | Balance to Complete Preconstruction | |
| Total Estimated Project Cost | | $ 43,300,000 | Planning After FY 1987 | $1,930,000 |

JUSTIFICATION: The existing Prompton Lake Project is a single-purpose flood control project. The dam extends 1230 feet across the valley and rises to a maximum height of 140 feet above the stream bed. The present facility does not provide for water supply storage. Prompton Reservoir controls the runoff from a drainage area of about 60 square miles. Storage for flood control will be unchanged by the project modification as authorized and together with existing Jadwin Reservoir will continue to provide flood protection downstream.

The proposed 28,000 acre-feet of active long-term storage at Prompton Reservoir will provide a net yield of 57 cubic feet per second. Recently two drought emergencies were declared by the Delaware River Basin Commission (DRBC). One on 15 Jan 81 which remained in effect through 27 Apr 82. A second emergency was declared by DRBC on 13 May 1985 and remained in effect through 18 December 1985. These recent serious droughts in the Delaware River Basin give emphasis to the early need for additional supplies of water. The modified Prompton Reservoir could also increase recreational capacity from the current 51,800 visitors annually to an estimated 250,000 visitors annually The average annual benefits based on 1 October 1985 prices are estimated at $9,710,900, of which $9,284,600 are water supply and $426,300 recreation.

DIVISION: North Atlantic DISTRICT: Philadelphia REGION: Middle Atlantic

Prompton Lake, PA
(Modification)

**NON-FEDERAL COSTS:** Consistent with the cost-sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, local interests will be required to provide all costs allocated to water supply including lands, easements and rights-of-way presently estimated at $38,100,000 and pay one-half of the separable and joint costs allocated to recreation, presently estimated at $2,600,000 and bear all costs of operation, maintenance, and replacement of project facilities.

**STATUS OF LOCAL COOPERATION:** A resolution adopted by DRBC on 18 February 1981 called for resumption of preconstruction planning studies. A letter from the DRBC dated 29 August 1983 reiterated its strong support for the project and stated that it would adhere to any cost-sharing arrangements as reflected by existing or revised statutory requirements. In addition, a letter dated 23 June 1981 from the Commonwealth of Pennsylvania indicated that it is ready and able to join with the other Basin States, through the Delaware River Basin Commission (DRBC) to make the necessary assurances to repay the costs of water supply and storage provided by the Prompton Modification Project, in accordance with the provisions of the Water Supply Act of 1958.

**COMPARISON OF FEDERAL COST ESTIMATES:** The current cost estimate of $ 40,700,000 is an increase of $1,200,000 over the latest estimate ($39,500,000) submitted to Congress (FY 1985). The increase includes $2,790,000 for price level, $815,000 for Engineering and Design and $195,000 for Supervision and Administration based on a refinement of the preconstruction planning estimate and a decrease of $2,600,000 consistent with the cost sharing agreed to by the Administration and the Senate Majority Leadership for the cost of recreation.

**STATUS OF ENVIRONMENTAL STATEMENT AND COMPLIANCE WITH THE CLEAN WATER ACT:** The draft EIS will be filed in the 4th Quarter FY 1988 and the final EIS will be filed in the 2nd Quarter FY 1989. Provisions of Section 404 of the Clean Water Act will be met by a Section 404(b)(1) evaluation, a public notice, and a certification or waiver from the Commonwealth of Pennsylvania and the District Engineer's signature on the Supplement to the GDM in the 2nd Quarter FY 1989.

**OTHER INFORMATION:** Preconstruction planning is scheduled to be completed in March 1990.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE

**Division:** North Atlantic
**District:** Philadelphia

**Project:** Prompton Lake, Pennsylvania
(Modification)

| | Estimates Presented to Congress ($1,000) | | | | |
|---|---|---|---|---|---|
| Item | Original Baseline | Cumulative Changes | Last | Incremental Change | Current |
| Federal Cost<br>(Price Level) | 5,300<br>(Jul 64) | | 39,500<br>(Oct 83) | | 40,700<br>(Oct 85) |
| Reason for Changes | | (34,200) | | (1,200) | |
| a. Price Escalation (Construction Features) | | 25,581 | | +2,790 | |
| b. Design Changes | | 7,183 1/ | | +1,010 5/ | |
| c. Additional Function Added Under General Authority | | | | | |
| d. Authorized Modification | | | | | |
| e. Post-Contract Award and Other Estimating Adjustments | | 185 2/ | | | |
| f. Schedule Changes | | | | | |
| g. Sundry | | 324 3/ | | -2,600 6/ | |
| h. Price Escalation (Real Estate) | | 927 4/ | | | |

1/ Includes $7,183,000 reflecting changes in design criteria for dam embankment, spillway and outlet works ($2,790,000), associated engineering and design ($1,670,000), and updating design criteria and changed field conditions for other miscellaneous project features including recreation facilities, buildings, grounds, utilities, and relocations ($2,723,000).

2/ Includes estimating adjustments for additional items not in the original estimate for acquisition of land and fish and wildlife facilities.

3/ Includes miscellaneous sundry adjustments for recomputation of district overhead and cost for GSA office space.

4/ Real estate cost adjustment due to price level escalation.

5/ Includes $815,000 for Engineering and Design and $195,000 for Supervision and Administration based on a refinement of the Preconstruction Planning estimate.

6/ Local interests will now be required to provide one-half of the cost of Recreation.

APPROPRIATION TITLE: Construction General - Channels and Harbors (Navigation)

PROJECT: Delaware River in the Vicinity of Camden, New Jersey (New)

LOCATION: The project is located in Camden, New Jersey, on the east bank of the Delaware River, directly opposite the City of Philadelphia, Pennsylvania. The project area is in front of the Beckett Street Terminal.

AUTHORIZATION: River and Harbor Act of 2 March 1945.

BENEFIT-COST RATIO: The benefit-cost ratio is 4.5 to 1 at 8 5/8%. The benefit to cost ratio is based on the project functioning independently.

| SUMMARIZED FINANCIAL DATA | | Accum. % of Est. Fed. Cost |
|---|---|---|
| Estimated Total Appropriation Requirement | $3,310,000 | |
| Future non-Federal Reimbursement | 440,000 | |
| Estimated Federal Cost (Ultimate) | $2,870,000 | |
| Estimated non-Federal Cost | $1,895,000 | |
| Cash Contribution $1,105,000 | | |
| Other Costs 350,000 | | |
| Reimbursements 440,000 | | |
| Total Estimated Project Cost | $4,765,000 | |
| Allocations to 30 September 1985 | 220,000 | |
| Conference Allowance for FY 1985 | 0 | |
| Allocation for FY 1986 | 0 | |
| Allocations to Date | 220,000 | 7 |
| Allocation Requested for FY 1987 | 2,650,000 1/ | |
| Scheduled Balance to Complete after 1987 | 0 | |
| Unscheduled Balance to Complete after 1987 | 0 | |

| STATUS: (1 Jan 1986) | PERCENT COMPLETE | COMPLETION SCHEDULE |
|---|---|---|
| Channel Dredging | 0 | Sep 1987 |
| Entire Project | 0 | Sep 1987 |

PHYSICAL DATA:

CHANNEL: 2,700 feet along the inshore side and approximately 4900 along the ship channel, from the ship channel in the Delaware River to a line parallel with and 50 feet distant from the established pierhead line from the maintained depth of 30 feet to a depth of 37 feet mean low water.

1/ Obligation and expenditure of budgeted funds for construction of this project are contingent upon enactment of legislation enabling recovery of all or part of the costs to be expended by the project sponsor and the Federal Government in accordance with the agreement between the Administration and the Senate majority leadership.

DIVISION: North Atlantic

DISTRICT: Philadelphia

REGION: Middle Atlantic
Delaware River in the
Vicinity of Camden, NJ

**JUSTIFICATION:** The project will permit ready access and egress of deep draft vessels transporting general cargo and coal exports to and from the Beckett Street Terminal (formerly Camden Marine Terminal), thus reducing transportation costs. The presently maintained 30-foot depth is a detriment to the efficient operation of deep draft vessels calling on the port. Unless plans are developed to provide adequate access for current and future ship movements, increased costs will be incurred due to lightloading, tidal delay, and use of smaller ships than those that can be accomodated at the Terminal. The average annual benefits, all commercial navigation, are $3,915,900 based on 1 October 1985 prices.

**FISCAL YEAR 1987:** The requested amount of $2,650,000 will be applied as follows:

| | |
|---|---|
| Dredging | $2,540,000 |
| Engineering and Design | 10,000 |
| Supervision and Administration | 100,000 |
| Total | $2,650,000 |

**NON-FEDERAL COSTS:** Consistent with the cost-sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, local interests will be required to provide lands, easements, rights-of-way, and required disposal areas, including disposal area preparation, presently estimated at $350,000. Local interests have agreed to pay 25% of the costs allocated to deep draft navigation during construction presently estimated at $4,415,000 and pay an additional 10% of the costs allocated to deep draft navigation. Local interests are required to maintain the wharves at the terminal and the area 50 feet channelward from the pierhead line to a depth of water equal to that provided by the United States in the adjacent navigation channel.

**STATUS OF LOCAL COOPERATION:** A letter from the Executive Director of the South Jersey Port Corporation(an entity of the State of New Jersey), dated 17 March 1981, indicated that the corporation is willing and able to provide the necessary local cooperation for the project, in accordance with the provisions of the River and Harbor Act of 2 March 1945. These assurances were reconfirmed in letters from the Executive Director on 12 April 1982 and 11 July 1983. On 16 October 1985, the Executive Director furnished a letter of assurance agreeing to revised cost sharing.

**COMPARISON OF FEDERAL COST ESTIMATE:** The current Federal (Corps of Engineers) Cost Estimate of $2,870,000 is a decrease of $2,880,000 from the last estimate ($5,750,000) submitted to Congress (FY 1984). The decrease is attributed to findings of the October 1983 GDM, that included a reduction in size of the project area and a refinement to the estimate of dredge quantity; changes to the cost sharing requirement and elimination of completed work from the cost estimate partly offset by a price level rise and inclusion of the estimated inflation allowance through construction.

**STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH THE CLEAN WATER ACT:** An Environmental Assessment was completed and a Finding Of No Significant Impact (FONSI) signed on 25 October 1983. The provisions of Section 404 of the Clean Water Act have been met by a Section 404(b)(1) evaluation (25 October 1983), issuance of a Public Notice,(19 November 1982) certification from the State of New Jersey, (1 June 1983) and the District Commander's signature on the General Design Memorandum (25 October 1983).

**OTHER INFORMATION:** Initial planning funds were appropriated in FY 1982 and Preconstruction Planning was completed in October 1984. The construction contract for channel dredging is scheduled to be completed in September 1987.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

**Division:** North Atlantic
**District:** Philadelphia

**Project:** Delaware River in the Vicinity of Camden, New Jersey

| Item | Estimates Presented to Congress ($1,000) | | | | |
|---|---|---|---|---|---|
| | Original Baseline | Cumulative Changes | Last | Incremental Change | Current |
| Federal Cost | 5,080 | | 5,750 | | 2,870 |
| (Price Level) | (Oct 81) | | (Oct 82) | | (Oct 85) |
| Reason for Changes | | (+670) | | (-2,880) | |
| a. Price Escalation (Construction Features) | | +670 | | +692 1/ | |
| b. Design Changes | | | | -1,790 2/ | |
| c. Additional Function Added Under General Authority | | | | | |
| d. Authorized Modification | | | | | |
| e. Post-Contract Award and Other Estimating Adjustments | | | | | |
| f. Schedule Changes | | | | | |
| g. Sundry | | | | -1,782 3/ | |
| h. Price Escalation (Real Estate) | | | | | |

1/ Includes $225,000 for estimated inflation from 1 Oct 1985 through the construction period.
2/ Based on GDM
3/ Includes the reduction in Federal cost attributable to changes in the cost sharing requirement (-$1,895,000), the increase in project cost for the disposal area(+$115,000) and the reduction in Federal cost for completed preauthorization studies (-$2,000).

REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: NAVIGATION

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM (a) | PROJECT COST ESTIMATE (b) | TOTAL TO 30 SEP 19 85 (c) | CURRENT FY 1986 (d) | BUDGET FY 1987 (e) | BALANCE TO COMPLETE AFTER FY 19 87 (f) |
|---|---|---|---|---|---|---|
| 1 | CHANNELS | 4,020,000 | 0 | 0 | 4,020,000 | 0 |
| 2 | ENGINEERING AND DESIGN | 215,000 | 200,000 | 0 | 15,000 | 0 |
| 3 | SUPERVISION AND ADMINISTRATION | 180,000 | 20,000 | 0 | 160,000 | 0 |
| 4 | | | | | | |
| 5 | TOTAL FEDERAL AND NON-FEDERAL COSTS | 4,415,000 1/ | 220,000 | 0 | 4,195,000 | 0 |
| 6 | UNDISTRIBUTED COSTS - NONE- | | | | | |
| 7 | TOTAL PROJECT COSTS | 4,415,000 | 220,000 | 0 | 4,195,000 | 0 |
| 8 | PENDING ADJUSTMENTS - NONE | | | | | |
| 9 | TOTAL COSTS | 4,415,000 | 220,000 | 0 | 4,195,000 | 0 |
| 10 | UNDELIVERED ORDERS - NONE | | | | | |
| 11 | TOTAL OBLIGATIONS | | | | | |
| 12 | TOTAL FEDERAL FUNDS | 2,870,000 | 220,000 | 0 | 2,650,000 | 0 |
| 13 | TOTAL NON-FEDERAL FUNDS | 1,545,000 | 0 | 0 | 1,545,000 | 0 |
| 14 | | | | | | |
| 15 | | | | | | |
| 16 | METHOD OF FINANCING | | | | | |
| 17 | FEDERAL FUNDS | 2,870,000 | | | | |
| 18 | ALLOCATIONS | | 220,000 | | | |
| 19 | UNOBLIGATED CARRYOVER - PRIOR YEAR | | | 0 | 0 | 0 |
| 20 | APPROPRIATION REQUIRED | | | 0 | 2,650,000 | 0 |
| 21 | NON-FEDERAL FUNDS (CONTRIBUTIONS ONLY) | 1,545,000 | | | | |
| 22 | CONTRIBUTIONS | | 0 | | | |
| 23 | UNOBLIGATED CARRYOVER | | | 0 | 0 | 0 |
| 24 | CONTRIBUTIONS REQUIRED | | | 0 | 1,545,000 | 0 |
| 25 | | | | | | |
| 26 | | | | | | |
| 27 | | | | | | |
| 28 | | | | | | |
| 29 | | | | | | |
| 30 | | | | | | |
| 31 | 1/ Does not include $350,000 non-Federal cost for disposal area and disposal area preparation. | | | | | |
| 32 | | | | | | |
| 33 | | | | | | |

| | | | |
|---|---|---|---|
| EFFECTIVE DATE<br>JANUARY 1986 | DIVISION NORTH ATLANTIC<br>DISTRICT PHILADELPHIA | REGION MIDDLE ATLANTIC<br>BASIN DELAWARE RIVER | PROJECT<br>DELAWARE RIVER IN THE VICINITY OF CAMDEN, NEW JERSEY |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE.

APPROPRIATION TITLE: Construction, General - Reservoir (Flood Control)

PROJECT: Francis E. Walter Dam, Pennsylvania - Modification (New)

LOCATION: The dam is located on the Lehigh River, one-half mile downstream from the confluence of the Lehigh River and Bear Creek in Luzerne and Carbon Counties, Pennsylvania. It is approximately five miles upstream from White Haven, Pennsylvania, and approximately 75 miles upstream from the confluence of the Lehigh and Delaware Rivers at Easton, Pennsylvania.

AUTHORIZATION: Flood Control Act of 1962.

BENEFIT-COST RATIO: The benefit-cost ratio is 1.5 to 1 at 3-1/4 percent. The benefit-cost ratio is based on the water supply and recreation benefits the modification would provide independently of the flood control benefits obtained from the existing project. The modification will also provide additional flood control benefits by extending the economic life of the existing flood control project.

| SUMMARIZED FINANCIAL DATA | | | Accum. % of Est. Fed. Cost |
|---|---|---|---|
| Estimated Federal Cost | | $ 14,400,000 | |
| Estimated Non-Federal Cost: | | 110,600,000 | |
| Cash Contributions | $110,600,000 | | |
| Other Costs | 0 | | |
| Total Estimated Project Cost | | $125,000,000 | |
| Allocations to 30 September 1985 | | 4,199,000 | |
| Conference Allowance for FY 1986 | | 1,556,000 | |
| Allocation for FY 1986 | | 1,556,000 | |
| Allocations to Date | | 5,755,000 | 40 |
| Allocation Requested for FY 1987 | | 3,000,000 | 61 |
| Scheduled Balance to Complete after FY 1987 | | 5,645,000 | |
| Unscheduled Balance to Complete after FY 1987 | | 0 | |

| STATUS (1 January 1986) | PERCENT COMPLETE | COMPLETION SCHDULE |
|---|---|---|
| Lands and Damages | 0 | Mar 1990 |
| Relocations | 0 | Jun 1991 |
| Reservoir | 0 | Sep 1992 |
| Dam and Appurtenant Works | 0 | Jun 1991 |
| Recreation Facilities | 0 | Sep 1992 |
| Entire Project | 0 | Sep 1992 |

Division: North Atlantic
District: Baltimore
Region: Middle Atlantic
Francis E. Walter Dam, Pennsylvania
- Modification

## PHYSICAL DATA

### Lands and Damages

| Existing Project | Modification |
|---|---|
| Acres - 1,803 | Acquire additional 3,551 acres |
| Type - Predominantly Woodland | Improvements - Dwellings and recreation camps |

### Relocations

| Modification | | |
|---|---|---|
| L.R. 40041 | 2.7 miles | ($12,500,000) |
| Other Roads | 0.2 miles | ( 190,000) |
| Utility Lines | 3.7 miles | ( 5,460,000) |
| TOTAL | | $18,150,000 |

### Dam

| Existing Project | Modification |
|---|---|
| Type - Earth and rockfill | Downstream raising |
| Height - 234 feet | Height - 264 feet |
| Length - 3,000 feet | Length - 3,500 feet |

### Spillway

| Existing Project | Modification |
|---|---|
| Type - Uncontrolled ogee crest | Replace existing spillway |
| Crest Elevation - 1,450 feet | Type - Uncontrolled ogee crest |
| Crest Length - 450 feet | Crest Elevation - 1,482 feet |
| | Crest Length - 675 feet |

### Lake Capacity

| Existing Project | Modification |
|---|---|
| Flood Control-108,000 acre-ft | Flood Control-108,000 acre-ft |
| Conservation - 1,800 acre-ft | Water Supply - 70,000 acre-ft |
| TOTAL 109,800 acre-ft | Conservation - 3,000 acre-ft |
| | TOTAL 181,000 acre-ft |

### Recreation Facilities

| Existing Project | Modification |
|---|---|
| Minimal facilities - picnic areas, fisherman access | Expanded facilities - picnic areas, fisherman access boat launch, overlooks, trails, nature pavillion |

### Intake Tower

| Existing Project | Modification |
|---|---|
| Type - Flood Control | Replace existing tower |
| Height - 250 feet | Type - Flood control and selective withdrawal |
| | Height - 274 feet |

### Dike

| Existing Project | Modification |
|---|---|
| Type - Earth | Raise existing dike |
| Height - 30 feet | Height - 40 feet |
| Length - 1,490 feet | Length - 4,978 feet |

Francis E. Walter Dam, Pennsylvania
- Modification

JUSTIFICATION: The existing Francis E. Walter Dam project is a single-purpose flood control project. The dam extends 3,000 feet across the valley and rises to a maximum height of 234 feet above the streambed. The present facility does not provide water supply storage. The proposed modification involves raising the existing dam by 30 feet towards providing long-term storage for water supply and attendant recreation facilities with no reduction in flood control storage. Water supply storage will amount to 70,000 acre-feet (23 billion gallons) for an area that experienced its greatest drought on record during the 1960's and which, in 1981 and 1984-85, experienced serious droughts that prompted Delaware River Basin Commission (DRBC) declarations of drought emergencies. The DRBC has expressed its support for this modification by a resolution dated 23 April 1980 and by letters dated 8 August 1985 and 24 October 1985. The reservoir and recreation facilities will contribute to the long range economic growth of the area. The estimated average annual benefits, based on 1 October 1985 prices, are as follows:

| Breakdown of Benefits | Amount |
|---|---|
| Water Supply | $5,135,000 |
| Recreation | 1,151,000 |
| Flood Control | 219,000 |
| TOTAL | $6,505,000 |

FISCAL YEAR 1987: The requested amount will be applied as follows:

| | |
|---|---|
| Complete real estate planning | $ 160,000 |
| Initiate and complete dam grouting | 720,000 |
| Engineering and Design | 1,620,000 |
| Supervision and Administration | 500,000 |
| TOTAL | $3,000,000 |

NON-FEDERAL COSTS: Consistent with the cost-sharing and financing concepts agreed to by the Administration and Senate Majority leadership, local interests are required to pay 35 percent of costs allocated to flood control, currently estimated at $1,600,000; pay all costs allocated to water supply, presently estimated at $97,600,000 for construction and $80,000 annually for operation and maintenance; pay one-half of the separable costs allocated to recreation presently estimated at $11,400,000 and bear all costs of operation and maintenance of the facilities presently estimated at $106,000. Local interests have also agreed to make all required payments concurrently with project construction.

STATUS OF LOCAL COOPERATION: The Delaware River Basin Commission (DRBC) is the local sponsor for the project. By letters of 8 August 1985 and 24 October 1985, the DRBC indicated [illegible] to follow the cost sharing arrangements pending between the Congress and the Administration. Negotiations [illegible] Commission are nearly complete and execution of the Local Cooperation Agreement is expected by June 1986.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $14,400,000 is a decrease of $98,600,000 from the latest estimate ($113,000,000) submitted to Congress (FY 1986). This change includes increases of $270,000 based on higher price levels to 1 October 1985 and $1,400,000 for an estimated inflation allowance from 1 October 1985 through the construction period. These increases were more than offset by decreases of $270,000 for post contract award and other estimating adjustments due to refinements in design and $100,000,000 for a sundry adjustment, reflecting the willingness of local interests to accelerate payment of their share of project costs during construction.

MAJOR DESIGN CHANGES SINCE PROJECT AUTHORIZATION: None.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH THE CLEAN WATER ACT: The draft EIS was filed with the EPA in February 1985 and the final EIS will be filed in the 2nd quarter of FY 1986. The provisions of Section 404 of the Clean Water Act were met by a Section 404 (b)(1) evaluation (2nd quarter of FY 1985), a Public Notice issued (2nd quarter of FY 1986), a certification from the Commonwealth of Pennsylvania (2nd quarter of FY 1986), and the District Commander's signature on the General Design Memorandum (4th quarter of FY 1985).

OTHER INFORMATION: Funds to initiate planning were appropriated in FY 1981. Preconstruction planning is scheduled to be completed in March 1986.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: North Atlantic
District: Baltimore Project: Francis E. Walter Dam, Pennsylvania - Modification

| Item | Estimates Presented to Congress ($1,000)<br>Original Baseline | Cumulative Changes | Last | Incremental Change | Current |
|---|---|---|---|---|---|
| Federal Cost | 56,600 | | 113,000 | | 14,400 4/ |
| (Price Level) | (Oct 1979) | | (Oct 1984) | | |
| Reason For Changes | | (56,400) | | (-98,600) 4/ | |
| a. Price Escalation (Construction Features) | | 19,795 | | 1,600 | |
| b. Design Changes | | 42,520 | | 0 | |
| c. Additional Functions Added Under General Authority | | 0 | | 0 | |
| d. Authorized Modifications | | 0 | | 0 | |
| e. Post-Contract Award and Other Estimating Adjustments | | -7,945 1/ | | -270 2/ | |
| f. Schedule Changes | | 0 | | 0 | |
| g. Sundry | | 0 | | -100,000 3/ | |
| h. Price Escalation (Real Estate) | | 2,030 | | 70 | |

1/ Reflects: $+3,400 due to reevaluation of Engineering and Design requirements; $-10,550 based on general design studies due to refinement in design for raising the dam and dike; and a net decrease of $-795 based on reanalysis of real estate acquisition costs.

2/ Reflects refinements in design based on completed general design memorandum.

3/ Reflects the willingness of local interests to accelerate payment of their share of project costs during construction.

4/ Includes $1,400 allowance for estimated inflation from 1 October 1985 through the construction period.

REPORTS CONTROL SYMBOL: DAEN-CWB-13

| | |
|---|---|
| APPROPRIATION TITLE: CONSTRUCTION GENERAL | CLASSIFICATION: FLOOD CONTROL - RESERVOIRS |

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 1986 AND 1987

| LINE NO | ITEM | PROJECT COST ESTIMATE | TOTAL TO 30 SEP 1985 | CURRENT FY 1986 | BUDGET FY 1987 | BALANCE TO COMPLETE AFTER FY 1987 |
|---|---|---|---|---|---|---|
| | (a) | (b) | (c) | (d) | (e) | (f) |
| 1 | LANDS AND DAMAGES | 4,870,000 | | | 160,000 | 4,710,000 |
| 2 | RELOCATIONS | 18,150,000 | | | | 18,150,000 |
| 3 | RESERVOIRS | 4,730,000 | | | | 4,730,000 |
| 4 | DAMS | 75,190,000 | | | 720,000 | 74,470,000 |
| 5 | FISH AND WILDLIFE FACILITIES | 1,740,000 | | | | 1,740,000 |
| 6 | ROADS | 1,890,000 | | | | 1,890,000 |
| 7 | RECREATION FACILITIES | 2,860,000 | | | | 2,860,000 |
| 8 | CULTURAL MITIGATION | 230,000 | | | | 230,000 |
| 9 | BUILDINGS, GROUNDS, AND UTILITIES | 1,010,000 | | | | 1,010,000 |
| 10 | PERMANENT OPERATING EQUIPMENT | 280,000 | | | | 280,000 |
| 11 | ENGINEERING AND DESIGN | 8,630,000 | 3,902,700 | 1,342,300 | 1,620,000 | 1,765,000 |
| 12 | SUPERVISION AND ADMINISTRATION | 5,420,000 | 248,100 | 261,900 | 500,000 | 4,410,000 |
| 13 | | | | | | |
| 14 | TOTAL APPLIED COST (Fed Funds and | 125,000,000 | 4,150,800 | 1,604,200 | 3,000,000 | 116,245,000 |
| 15 | Non-Fed Contributions) | | | | | |
| 16 | Undistributed Costs - None | | | | | |
| 17 | TOTAL PROJECT COST (Fed Funds and | 125,000,000 | 4,150,800 | 1,604,200 | 3,000,000 | 116,245,000 |
| 18 | Non-Fed Contributions) | | | | | |
| 19 | Pending Adjustments - None | | | | | |
| 20 | TOTAL COST (Fed Funds and | 125,000,000 | 4,150,800 | 1,604,200 | 3,000,000 | 116,245,000 |
| 21 | Non-Fed Contributions) | | | | | |
| 22 | Undelivered Orders | | 48,200 | - 48,200 | | |
| 23 | TOTAL OBLIGATIONS (Fed Funds and | | 4,199,000 | 1,556,000 | 3,000,000 | 116,245,000 |
| 24 | Non-Fed Contributions) | | | | | |
| 25 | | | | | | |
| 26 | FEDERAL FUNDS | | | | | |
| 27 | TOTAL COST | 14,400,000 | 4,150,800 | 1,604,200 | 3,000,000 | 5,645,000 |
| 28 | Undelivered Orders | | 48,200 | - 48,200 | | |
| 29 | TOTAL OBLIGATIONS | | 4,199,000 | 1,556,000 | 3,000,000 | 5,645,000 |
| 30 | | | | | | |
| 31 | | | | | | |
| 32 | | | | | | |
| 33 | | | | | | |

| | | | |
|---|---|---|---|
| EFFECTIVE DATE 1 JAN 86 | DIVISION NORTH ATLANTIC<br>DISTRICT BALTIMORE | REGION MIDDLE ATLANTIC<br>BASIN DELAWARE RIVER | PROJECT FRANCIS E. WALTER DAM, PENNSYLVANIA - MODIFICATION |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE.

REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: FLOOD CONTROL - RESERVOIRS

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 1986 AND 1987

| LINE NO | ITEM (a) | PROJECT COST ESTIMATE (b) | TOTAL TO 30 SEP 1985 (c) | CURRENT FY 1986 (d) | BUDGET FY 1987 (e) | BALANCE TO COMPLETE AFTER FY 1987 (f) |
|---|---|---|---|---|---|---|
| 1 | NON-FEDERAL CONTRIBUTIONS | | | | | |
| 2 | TOTAL COST | 110,600,000 | | | | 110,600,000 |
| 3 | Undelivered Orders | | | | | |
| 4 | TOTAL OBLIGATIONS | | | | | 110,600,000 |
| 5 | | | | | | |
| 6 | METHOD OF FINANCING | | | | | |
| 7 | FEDERAL FUNDS | | | | | |
| 8 | ALLOCATIONS | | 4,199,000 | 1,556,000 | | |
| 9 | UNOBLIGATED CARRYOVER FROM PRIOR YEAR | | | | | |
| 10 | TOTAL FUNDS AVAILABLE FOR OBLIGATION | | | 1,556,000 | | |
| 11 | APPROPRIATIONS REQUIRED | | | | 3,000,000 | 5,645,000 |
| 12 | | | | | | |
| 13 | NON-FEDERAL CONTRIBUTIONS | | | | | |
| 14 | CONTRIBUTED FUNDS | | | | | |
| 15 | UNOBLIGATED CARRYOVER FROM PRIOR YEAR | | | | | |
| 16 | TOTAL FUNDS AVAILABLE FOR OBLIGATION | | | | | |
| 17 | CONTRIBUTIONS REQUIRED | | | | | 110,600,000 |
| 18 | | | | | | |
| 19 | | | | | | |
| 20 | | | | | | |
| 21 | | | | | | |
| 22 | | | | | | |
| 23 | | | | | | |
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| 30 | | | | | | |
| 31 | | | | | | |
| 32 | | | | | | |
| 33 | | | | | | |

| | | | |
|---|---|---|---|
| EFFECTIVE DATE<br>1 JAN 86 | DIVISION NORTH ATLANTIC<br>DISTRICT BALTIMORE | REGION MIDDLE ATLANTIC<br>BASIN DELAWARE RIVER | PROJECT FRANCIS E. WALTER DAM, PENNSYLVANIA - MODIFICATION |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE.

APPROPRIATION TITLE: Construction, General - Channels and Harbors (Navigation)

PROJECT: Baltimore Harbor and Channels, Maryland - 1958 Modification (Continuing)

LOCATION: Baltimore Harbor is situated at the head of the navigable portion of the Patapsco River, approximately 172 miles from the entrance to Chesapeake Bay at the Virginia Capes.

AUTHORIZATION: River and Harbor Act of 1958.

BENEFIT-COST RATIO: The remaining benefit-remaining cost ratio is 6.2 to 1 at 2 5/8%. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1961) was 3.1 to 1. The benefit-cost ratio is based on the project functioning independently.

| SUMMARIZED FINANCIAL DATA | | | Accum. % of Est. Fed. Cost (C of E Cost) |
|---|---|---|---|
| Estimated Federal Cost (C of E) | | $ 43,300,000 | |
| Estimated Federal Cost (US Coast Guard) | | 60,000 | |
| Estimated Non-Federal Cost: | | 510,000 1/ | |
| Cash Contributions | 0 | | |
| Other | $510,000 | | |
| Total Estimated Project Cost | | $ 43,870,000 | |
| Allocations to 30 September 1985 | | $25,340,000 | |
| Conference Allowance for FY 1986 | | 2,500,000 | |
| Allocation for FY 1986 | | 2,500,000 | |
| Allocations to Date | | 27,840,000 | 64 |
| Allocation Requested for FY 1987 | | 5,000,000 | 76 |
| Scheduled Balance to Complete after FY 1987 | | 10,460,000 | |
| Unscheduled Balance to Complete after FY 1987 | | 0 | |

| STATUS (1 January 1986) | PERCENT COMPLETE | COMPLETION SCHEDULE |
|---|---|---|
| Cape Henry and Rappahannock Shoal Channels | 100 | Jan 1964 |
| York Spit Channel | 100 | Feb 1967 |
| Craighill Entrance Channel through Brewerton-Fort McHenry Angle | 100 | Mar 1965 |
| Ferry Bar, Curtis Bay and Fort McHenry Channels | 100 | Dec 1965 |
| Approach Channel to C&D Canal | 100 | May 1981 |
| Connecting Channel to C&D Canal | 0 | Mar 1988 |
| Entire Project | 92 | Mar 1988 |

1/ In addition, local interests expended an estimated $3,990,000 for deepening the Northwest Branch Channel and approaches to wharves.

## PHYSICAL DATA

Channels: Main ship channels, Virginia - Cape Henry and York Spit sections, 42 feet deep and 1,000 feet wide; Rappanhannock Shoal, 42 feet deep and 800 feet wide, a total of 16.7 miles long.
Main ship channel, Maryland - Craighill Entrance to Ft. McHenry, 42 feet deep, 800 feet wide and 20.2 miles long.
Branch Channels, Maryland - Curtis Bay and Ferry Bar, 42 feet deep, 600 feet wide and 3.7 miles long.
Connecting Channel and Approach Channel to C&D Canal, Maryland - 35 feet deep, 600 feet wide and 15.7 miles long.

JUSTIFICATION: Baltimore Harbor is one of the major seaports serving the North Atlantic Coast of the United States. It is equipped with excellent cargo handling facilities and is served by several railroads which connect the port with the Midwest States. The port is 50 to 200 miles nearer the Midwest States than other North Atlantic ports. The port includes, among its many industries, the free world's largest steel plant. Waterborne commerce through the port averaged 48,100,000 tons annually for the period 1974-1983. A large portion of the port's commerce moves in foreign trade, and a very high percentage consists of bulk commodities (grain, ores, petroleum, and coal). These bulk commodities are moved most efficiently in large carriers, and the trend towards such carriers is clearly evident in the Port of Baltimore. The smaller vessels are being replaced by larger, more efficient ships.

The main channel and branch channels have been deepened to 42 feet and widened in accordance with the project authorization, and estimated attendant average annual benefits of $6,050,000 are being realized. Additionally, the Approach Channels to the C&D Canal have been deepened to 35 feet (authorized depth) and widened to 600 feet (authorized width). The work remaining to be completed is dredging the Connecting Channel to the C&D Canal (presently 27 feet by 400 feet) to full depth (35 feet) but to less than full width (450 feet in lieu of the authorized 600 feet). The recently completed Supplement to the General Design Memorandum determined that a channel width of 450 feet is adequate to meet present needs. Dredging of the Connecting Channel will result in savings to ship traffic by providing a 14-mile shorter route between Baltimore Harbor and the C&D Canal. The average annual benefits, all navigation, related to the remaining work are $3,512,000, based on 1 October 1985 prices.

FISCAL YEAR 1987: The requested amount will be applied as follows:

| | | |
|---|---|---|
| Continue dredging the Connecting Channel to C&D Canal | | $ 4,898,000 |
| Engineering and Design | | 15,000 |
| Supervision and Administration | | 87,000 |
| | TOTAL | $5,000,000 |

COMPLETED MODIFICATIONS: Work completed under previous authority consists of a main ship channel, 39 feet deep and generally 600 feet wide from 39-foot depth in Chesapeake Bay opposite the mouth of Magothy River to Fort McHenry; channel 39 feet deep and 1,000 feet wide in Chesapeake Bay opposite York Spit; branch channels 35 feet deep and 400 feet wide in Ferry Bar and Curtis Bay; a Connecting Channel to C&D Canal approaches, 27 feet deep and 400 feet wide; and four anchorages: Riverview No. 1, 4,500 feet long, 1,500 feet wide, 35 feet deep; Riverview No. 2, 2,400 feet long, 1,200 feet wide, 30 feet deep; Fort McHenry, 3,500 feet long, 400 feet wide, 35 feet deep; and Quarantine, 3,500 feet long, 600 feet wide and 35 feet deep. The cost of this completed work was $8,329,000.

REMAINING AUTHORIZED MODIFICATIONS: The 1970 River & Harbor Act modified the project to provide a channel 50 feet deep and generally 800 or 1,000 feet wide through the Chesapeake Bay from the Virginia Capes to the Port of Baltimore. The modification also provides for increased depths in the Baltimore Harbor branch channels. The total estimated Federal cost is $174,000,000 (C of E).

NON-FEDERAL COSTS: Local interests provided rights-of-way for spoil disposal near Hawkins Point including adjoining submerged land. The cost of acquiring these rights-of-way and relocating underwater utilities was $250,000. Additionally, local interests expended about $3,990,000 for dredging approaches to wharves and for dredging in the Northwest Branch in order to accommodate the deeper draft vessels which use the main harbor channels. Dredging of the Connecting Channel to the C&D Canal will require an estimated non-Federal cost of $260,000 for operations at the Hart-Miller Island diked disposal facility during construction. Costs of about $1,000,000 were also incurred in complying with the terms of local cooperation for work accomplished on prior modifications of the project.

STATUS OF LOCAL COOPERATION: The State of Maryland is furnishing the required local cooperation. Assurances of compliance with the requirements of local cooperation were accepted on 16 March 1961. The local cooperation agreement was executed with the State of Maryland on 11 August 1981. By letter dated 14 January 1985 the State requested that the Connecting Channel to the C&D Canal be deepened and widened and that the Hart-Miller Island diked facility be used for disposal of the dredged material.

COMPARISON OF FEDERAL COST ESTIMATE: The current Federal (C of E) cost estimate of $43,300,000 is a decrease of $14,600,000 from the latest estimate ($57,900,000) submitted to Congress (FY 1982). This change includes decreases of $8,944,000 for adjustments in the estimated inflation allowance through the construction period and $5,656,000 for post contract award and other estimating adjustments. The $5,656,000 includes decreases of: $1,756,000 based on actual dredging costs for completed project units; $3,630,000 principally based on decreased dredging quantities for the Connecting Channel to the C&D Canal reflecting more recent surveys and a reduction in the proposed channel width (from 600 to 450 feet) based on current needs; and $270,000 for Engineering and Design and Supervision and Administration based on reanalysis of remaining requirements.

**STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT:** The Final Environmental Statement for maintenance dredging of the completed 42-foot deep main channel was filed with CEQ in January 1975. The Final Environmental Statement for the Connecting Channel and the Approach Channel to the C&D Canal was filed with EPA in December 1979. This impact statement discussed dredging and disposal effects for the Approach Channels but only discussed dredging effects for the Connecting Channel since a disposal site had not been identified at that time. The environmental effects of disposal of the Connecting Channel material have been addressed in an environmental assessment prepared in September 1985.

The provisions of Section 404 of the Clean Water Act were met by a Section 404 (b)(1) Evaluation, a public notice issued on 15 November 1985, a certification issued by the State of Maryland in January 1986, and the District Commander's signature on the Supplement to the General Design Memorandum on 30 September 1985.

**OTHER INFORMATION:** Initial planning and initial construction funds were appropriated in FY 1961. The main channel was deepened to 42 feet and widened to authorized dimensions, and the Approach Channel to the C&D Canal was deepened to 35 feet (authorized depth) and widened to 450 feet (authorized width is 600 feet). The remaining work to deepen and widen the Connecting Channel to the C&D Canal and widen the Approach Channel to the C&D Canal was subsequently postponed, pending completion of dredging of the C&D Canal, since realization of project benefits from the remaining work rely on completion of the C&D Canal.

By letter of 14 May 1979 the State of Maryland designated Poole's Island Deep as the overboard disposal area for material to widen the Approach Channel to the C&D Canal; however, the limited remaining capacity at Poole's Island Deep would not accommodate the material to be dredged from the Connecting Channel to the C&D Canal. The State recommended postponing work on the Connecting Channel until the State implemented its program for containment structures. By letter dated 14 January 1985 the State requested that the Corps take necessary action to deepen and widen the Connecting Channel and that the Hart-Miller Island diked facility be used for disposal of the material.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: North Atlantic
District: Baltimore

Project: Baltimore Harbor and Channels, Maryland

| Item | Estimates Presented to Congress ($1,000) | | | | |
|---|---|---|---|---|---|
| | Orginial Baseline | Cumulative Changes | Last | Incremental Change | Current |
| Federal Cost<br>(Price Level) | 30,000<br>(Jul 1959) | | 57,900 5/ | | 43,300 4/ 5/ |
| Reason for Change | | (27,900) | | (-14,600) 4/ | |
| a. Price Escalation | | 24,285 | | - 8,944 | |
| b. Design Changes | | 0 | | 0 | |
| c. Addtional Function Added Under General Authorization | | 0 | | 0 | |
| d. Authorized Modification | | 0 | | 0 | |
| e. Post-Contract Award and Other Estimating Adjustments | | 3,283 1/ | | - 5,656 3/ | |
| f. Schedule Changes | | 310 | | 0 | |
| g. Sundry | | 22 2/ | | 0 | |
| h. Real Estate | | 0 | | 0 | |

1/ Includes (1) -$1,160 based on bids received for dredging, (2) $106 for payment of a dredging contract claim, (3) $4,192 based on refinements in estimated quantities and unit prices for materials, and (4) $65 for engineering and design and $80 for supervision and administration based on cost experience.

2/ For rental of GSA-furnished office space (PL 92-313).

3/ Includes: -$1,756 based on actual dredging costs for completed project units; -$3,630 principally based on decreased dredging quantities for the Connecting Channel to the C&D Canal reflecting more recent hydrographic surveys and a reduction in the proposed channel width based on current needs; and -$270 for engineering and design and supervision and administration based on reanalysis of remaining requirements.

4/ Includes -$8,944 for adjustments in the estimated inflation allowance through the construction period.

5/ Includes an allowance for estimated inflation through the construction period.

REPORTS CONTROL SYMBOL: DAEN-CWB-13

| | |
|---|---|
| **APPROPRIATION TITLE:** CONSTRUCTION GENERAL | **CLASSIFICATION:** Channels and Harbors (Navigation) |

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 1986 AND 1987

| LINE NO | ITEM | PROJECT COST ESTIMATE | TOTAL TO 30 SEP 1985 | CURRENT FY 1986 | BUDGET FY 1987 | BALANCE TO COMPLETE AFTER FY 1987 |
|---|---|---|---|---|---|---|
| | (a) | (b) | (c) | (d) | (e) | (f) |
| 1 | COMPLETED WORK | 25,100,000 | 25,100,000 | | | |
| 2 | CHANNELS | 17,690,000 | | 2,462,000 | 4,898,000 | 10,330,000 |
| 3 | ENGINEERING AND DESIGN | 240,000 | 182,600 | 42,400 | 15,000 | |
| 4 | SUPERVISION AND ADMINISTRATION | 270,000 | 15,600 | 37,400 | 87,000 | 130,000 |
| 5 | | | | | | |
| 6 | TOTAL APPLIED COST (Fed Funds Only) | 43,300,000 | 25,298,200 | 2,541,800 | 5,000,000 | 10,460,000 |
| 7 | Undistributed Costs - None | | | | | |
| 8 | TOTAL PROJECT COST (Fed Funds Only) | 43,300,000 | 25,298,200 | 2,541,800 | 5,000,000 | 10,460,000 |
| 9 | Pending Adjustments - None | | | | | |
| 10 | TOTAL COST (Fed Funds Only) | 43,300,000 | 25,298,200 | 2,541,800 | 5,000,000 | 10,460,000 |
| 11 | Undelivered Orders | | | | | |
| 12 | TOTAL OBLIGATIONS (Fed Funds Only) | | 25,298,200 | 2,541,800 | 5,000,000 | 10,460,000 |
| 13 | | | | | | |
| 14 | METHOD OF FINANCING | | | | | |
| 15 | ALLOCATIONS | | 25,340,000 | 2,500,000 | | |
| 16 | UNOBLIGATED CARRYOVER FROM PRIOR YEAR | | | 41,800 | | |
| 17 | TOTAL FUNDS AVAILABLE FOR OBLIGATION | | | 2,541,800 | | |
| 18 | APPROPRIATIONS REQUIRED | | | | 5,000,000 | 10,460,000 |
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|---|---|---|---|
| EFFECTIVE DATE 1 JAN 86 | DIVISION NORTH ATLANTIC<br>DISTRICT BALTIMORE | REGION MIDDLE ATLANTIC<br>BASIN CHESAPEAKE BAY | PROJECT BALTIMORE HARBOR AND CHANNELS, MARYLAND |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE.

APPROPRIATION TITLE: Construction, General - Channels and Harbors (Navigation)

PROJECT: Baltimore Harbor and Channels, Maryland and Virginia - 1970 Modification (Continuing)

LOCATION: Baltimore Harbor is situated at the head of the navigable portion of the Patapsco River, approximately 172 miles from the entrance to Chesapeake Bay at the Virginia Capes.

AUTHORIZATION: River and Harbor Act of 1970.

BENEFIT-COST RATIO: The remaining benefit-remaining cost ratio is 4.8 to 1 at 8-1/8 percent. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1985) was 6.2 to 1. The benefit-cost ratio is based on the project functioning independently.

| SUMMARIZED FINANCIAL DATA | | |
|---|---|---|
| Estimated Appropriation Requirement (C of E) | | $174,000,000 |
| Scheduled Construction | $136,000,000 | |
| Unscheduled Construction | 38,000,000 | |
| Estimated Appropriation Requirement (US Coast Guard) | | 440,000 |
| Scheduled Construction | 440,000 | |
| Unscheduled Construction | 0 | |
| Estimated Total Appropriation Requirement | | 174,440,000 |
| Scheduled Construction | 136,440,000 | |
| Unscheduled Construction | 38,000,000 | |
| Future Non-Federal Reimbursement | | 10,900,000 |
| Scheduled Construction | 8,200,000 | |
| Unscheduled Construction | 2,700,000 | |

| STATUS (1 January 1986) | PERCENT COMPLETE | COMPLETION SCHEDULE |
|---|---|---|
| Scheduled | | |
| Rappahannock Shoal Channel | 0 | Jul 1987 |
| Cape Henry Channel | 0 | Nov 1988 |
| Craighill Entrance & Channel, Ft. McHenry Channel, Curtis Bay & Northwest Branch Channels | 0 | Jun 1988 |
| Craighill Angle through Brewerton Angle | 0 | Dec 1988 |
| York Spit Channel | 0 | Nov 1988 |
| Entire Initial Phase | 0 | Dec 1988 |
| Unscheduled | | |
| Widen All Channels to Authorized Dimensions | 0 | Indefinite 1/ |

1/ See paragraph: OTHER INFORMATION.

|  |  |  |  |
|---|---|---|---|
| Estimated Federal Cost (Ultimate) |  |  | $163,540,000 |
| Scheduled Construction |  | $128,240,000 |  |
| Unscheduled Construction |  | 35,300,000 |  |
| Estimated Non-Federal Cost |  |  | 206,400,000 |
| Scheduled Construction |  | 166,400,000 |  |
| Cash Contribution | $103,000,000 |  |  |
| Other Costs | 55,200,000 |  |  |
| Reimbursements | 8,200,000 |  |  |
| Unscheduled Construction |  | 40,000,000 |  |
| Cash Contribution | 27,000,000 |  |  |
| Other Costs | 10,300,000 |  |  |
| Reimbursement | 2,700,000 |  |  |
| Total Estimated Scheduled Construction Cost |  |  | 294,640,000 |
| Total Estimated Unscheduled Construction Cost |  |  | 75,300,000 |
| Total Estimated Project Cost |  |  | 369,940,000 |

|  |  | Accum. % of Est. Fed. Cost (C of E Cost) |
|---|---|---|
| Allocations to 30 September 1985 | $ 3,735,000 |  |
| Conference Allowance for FY 1986 | 0 |  |
| Potential Allocation for FY 1986 | 14,985,000 2/ |  |
| Potential Allocations through FY 1986 | 18,720,000 | 11 |
| Allocation Requested for FY 1987 | 54,000,000 3/ | 42 |
| Scheduled Balance to Complete after FY 1987 | 63,280,000 |  |
| Unscheduled Balance to Complete after FY 1987 | 38,000,000 |  |

2/ Based on current project schedule.

3/ Obligation and expenditure of budgeted funds for construction of this project are contingent upon enactment of legislation enabling recovery of all or part of the costs to be expended by the project sponsor and the Federal Government in accordance with the agreement between the Administration and the Senate Majority leadership.

Baltimore Harbor and Channels, Maryland and Virginia

## PHYSICAL DATA

| | Authorized Dimensions | | | Initial Phase | | |
|---|---|---|---|---|---|---|
| Channel | Depth | Width | Length | Depth | Width | Length |
| Main ship channels, Virginia: | | | | | | |
| Cape Henry channel | 50 feet | 1,000 feet | 3.0 miles | 50 feet | 1,000 feet | 3.0 miles |
| York Spit channel | 50 feet | 1,000 feet | 18.4 miles | 50 feet | 800 feet | 18.4 miles |
| Rappahannock Shoal channel | 50 feet | 1,000 feet | 10.3 miles | 50 feet | 800 feet | 10.3 miles |
| Main ship channel, Maryland: | | | | | | |
| Craighill Angle through Brewerton Angle | 50 feet | 800 feet | 9.6 miles | 50 feet | 700 feet | 9.6 miles |
| Craighill Entrance and channel, and Ft. McHenry channel | 50 feet | 800 feet | 11.5 miles | 50 feet | 700 feet | 11.5 miles |
| Branch channels, Maryland: | | | | | | |
| Curtis Bay | 50 feet | 600 feet | 2.2 miles | 50 feet | 400 feet | 2.2 miles |
| Northwest Branch - East | 49 feet | 600 feet | 1.0 miles | 49 feet | 600 feet | 1.0 miles |
| Northwest Branch - West | 40 feet | 600 feet | 1.3 miles | 40 feet | 600 feet | 1.3 miles |

JUSTIFICATION: Baltimore Harbor is one of the major seaports serving the North Atlantic coast of the United States. It is equipped with excellent cargo handling facilities and is served by several railroads which connect the port with the Midwest States. The port is 50 to 200 miles nearer the Midwest States than other North Atlantic ports. The port includes, among its many industries, the free world's largest steel plant. Waterborne commerce through the port averaged 48,100,000 tons annually for the period 1974-1983.

A large portion of the port's commerce moves in foreign trade, and a very high percentage consists of bulk commodities (iron ore, petroleum, grain, sugar, and coal). These bulk commodities are moved most efficiently in large carriers, and the trend towards such carriers is clearly evident in the Port of Baltimore. The smaller vessels are being replaced by larger, more efficient ships. It is anticipated that with provision of the project, ships in the range of 50,000 to 150,000 DWT will be calling regularly at the bulk commodity piers within the port. The benefits that would be derived from the improvement will result from the use of such fully loaded supercarriers over the 50-foot deep channel as opposed to the use of smaller ships over the present 42-foot deep channel. For iron ore, the savings per ton will range from $0.71 per ton for short trips from Canada to $2.60 per ton for longer trips from Brazil. For petroleum, the savings will be $1.72 per ton from the Caribbean. For coal, the savings are $3.98 per ton to Japan and $2.06 per ton to Europe. The average annual benefits, all navigation, are $126,478,000 based on 1 October 1985 prices.

FISCAL YEAR 1987: The requested amount will be applied as follows:

| | |
|---|---|
| Complete dredging the Rappahannock Shoal Channel | $ 5,390,000 |
| Continue dredging the Craighill Entrance and Channel, Ft. McHenry Channel, Curtis Bay and Northwest Branch Channels | 19,340,000 |
| Initiate dredging the Craighill Angle through the Brewerton Angle | 14,210,000 |
| Initiate dredging the York Spit Channel | 13,650,000 |
| Engineering and Design | 400,000 |
| Supervision and Administration | 1,010,000 |
| TOTAL | $54,000,000 |

COMPLETED MODIFICATIONS: Work completed under previous authority consists of a main ship channel, 39 feet deep and generally 600 feet wide from 39-foot depth in Chesapeake Bay opposite the mouth of Magothy River to Fort McHenry; channel 39 feet deep and 1,000 feet wide in Chesapeake Bay opposite York Spit; branch channels 35 feet deep and 400 feet wide in Ferry Bar and Curtis Bay; a Connecting Channel to C&D Canal approaches, 27 feet deep and 400 feet wide; and four anchorages: Riverview No. 1, 4,500 feet long, 1,500 feet wide, 35 feet deep; Riverview No. 2, 2,400 feet long, 1,200 feet wide, 30 feet deep; Fort McHenry, 3,500 feet long, 400 feet wide, 35 feet deep; and Quarantine, 3,500 feet long, 600 feet wide and 35 feet deep. The cost of this completed work was $8,329,000.

REMAINING AUTHORIZED MODIFICATIONS: The 1958 River & Harbor Act modified the project to provide a channel 42 feet deep and generally 800 or 1,000 feet wide through the Virginia Capes to Fort McHenry in Baltimore; and branch channels 42 feet deep and 600 feet wide in Curtis Bay and Ferry Bar; and Connecting Channel and Approach Channel to C&D Canal, 35 feet deep and 600 feet wide. The only work remaining to be completed is the dredging of the C&D Connecting Channel which is being initiated in July 1986 and is scheduled for completion in March 1988. The total estimated Federal (C of E) cost of the modification is $43,300,000.

NON-FEDERAL COSTS: Consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority leadership, local interests will be required to provide lands, easements, rights-of-way, and material disposal areas presently estimated at $36,990,000; modify or relocate utilities, where necessary in the construction of the project, presently estimated at $2,590,000; pay 42.8 percent of the costs allocated to deep draft navigation during construction, presently estimated at $103,000,000, pay an additional 3.5 percent of the costs allocated to deep draft navigation, presently estimated at $8,200,000, within a period of 30 years following completion, and pay 50 percent of the costs of incremental maintenance below 45 feet mean low water. In addition, local interests will expend an estimated $15,620,000 for dredging adjacent to wharves and docks.

Costs of about $5,000,000 were also incurred in complying with the terms of local cooperation for work accomplished on completed modifications of the project.

STATUS OF LOCAL COOPERATION: The State of Maryland is the local sponsor for the project. By letter dated 28 April 1981, the State furnished acceptable assurances of local cooperation that also specified suitable areas for disposal of dredged material from both Maryland and Virginia channels. Negotiations on increased non-Federal cost sharing were initiated with the State in April 1985 and are nearly completed. Execution of the Local Cooperation Agreement is expected in April 1986.

COMPARISON OF FEDERAL COST ESTIMATE: The current Federal (C of E) cost estimate of $174,000,000 is an increase of $17,000,000 over the latest estimate ($157,000,000) submitted to Congress (FY 1985). This change includes increases of $16,740,000 based on higher price levels to 1 October 1985 and $5,900,000 for an estimated inflation allowance from 1 October 1985 through the construction period. These increases were partially offset by a decrease of $5,640,000 for post contract award and other estimating adjustments based on reanalysis of dredging and associated inspection costs.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The Final Environmental Statement was filed with the Environmental Protection Agency on 11 September 1981. The provisions of Section 404 of the Clean Water Act were met with submission of the Final Environmental Impact Statement, including a Section 404 (b)(1) Evaluation Report, to Congress in March 1982.

OTHER INFORMATION: Initial planning funds were appropriated in FY 1977. Initial construction funds were included in the Supplemental Appropriations Act for FY 1985.

On 29 May 1985 the Governor of Maryland announced agreement with the Association of Maryland Pilots for initially dredging the 50-foot project to less than authorized channel widths. This phased approach was identified in the State's May 1985 report "Port of Baltimore - Action Plan for Channel Improvements" prepared by the Maryland Port Administration. The phased construction would allow for reducing initial construction costs and realizing most of the project benefits but without compromising operational safety. The Association of Maryland Pilots and U.S. Coast Guard endorsed the proposal and indicated the narrow channels would have no adverse impact on navigational safety. An evaluation of the proposal has concluded that the symmetric two-way channel of narrower dimensions would be adequate for safe navigation by the current fleet for existing traffic patterns. This initial phase is currently scheduled for completion in December 1988. The second phase of the project (i.e., widening to authorized dimensions), which is not scheduled at this time, will provide for additional capability, if required, as vessel sizes increase in the future.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

**Division:** North Atlantic
**District:** Baltimore

**Project:** Baltimore Harbor and Channels,
Maryland and Virginia

| Item | Estimates Presented to Congress ($1,000) | | | | |
|---|---|---|---|---|---|
| | Original Baseline | Cumulative Changes | Last | Incremental Change | Current |
| Federal Cost | 157,000 | | 157,000 | | 174,000 2/ |
| (Price Level) | (Oct 83) | | (Oct 83) | | |
| Reason for Change | | (0) | | (17,000) 2/ | |
| a. Price Escalation | | 0 | | 22,640 | |
| b. Design Changes | | 0 | | 0 | |
| c. Addtional Function Added Under General Authorization | | 0 | | 0 | |
| d. Authorized Modification | | 0 | | 0 | |
| e. Post-Contract Award and Other Estimating Adjustments | | 0 | | - 5,640 1/ | |
| f. Schedule Changes | | 0 | | 0 | |
| g. Sundry | | 0 | | 0 | |
| h. Real Estate | | 0 | | 0 | |

1/ Reanalysis of unit prices for dredging and reanalysis of requirements for Engineering and Design and Supervision and Administration.

2/ Includes $5,900 allowance for estimated inflation from 1 October 1985 through the construction period.

REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: Channels and Harbors (Navigation)

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM | PROJECT COST ESTIMATE | TOTAL TO 30 SEP 19 85 | CURRENT FY 19 86 | BUDGET FY 19 87 | BALANCE TO COMPLETE AFTER FY 19 87 |
|---|---|---|---|---|---|---|
| | (a) | (b) | (c) | (d) | (e) | (f) |
| 1 | CHANNELS | 289,560,000 | | 25,000,000 | 92,500,000 | 172,060,000 |
| 2 | ENGINEERING AND DESIGN | 5,720,000 | 3,474,800 | 305,200 | 700,000 | 1,240,000 |
| 3 | SUPERVISION AND ADMINISTRATION | 8,720,000 | 238,700 | 701,300 | 1,800,000 | 5,980,000 |
| 4 | | | | | | |
| 5 | TOTAL APPLIED COST (Fed Funds and | 304,000,000 | 3,713,500 | 26,006,500 | 95,000,000 | 179,280,000 |
| 6 | Non-Fed Contributions) | | | | | |
| 7 | Undistributed Costs - None | | | | | |
| 8 | TOTAL PROJECT COST (Fed Funds and | 304,000,000 | 3,713,500 | 26,006,500 | 95,000,000 | 179,280,000 |
| 9 | Non-Fed Contributions) | | | | | |
| 10 | Pending Adjustments - None | | | | | |
| 11 | TOTAL COST (Fed Funds and | 304,000,000 | 3,713,500 | 26,006,500 | 95,000,000 | 179,280,000 |
| 12 | Non-Fed Contributions) | | | | | |
| 13 | Undelivered Orders | | 100 | - 100 | | |
| 14 | TOTAL OBLIGATIONS (Fed Funds and | | 3,713,600 | 26,006,400 | 95,000,000 | 179,280,000 |
| 15 | Non-Fed Contributions) | | | | | |
| 16 | | | | | | |
| 17 | FEDERAL FUNDS | | | | | |
| 18 | TOTAL COST | 174,000,000 | 3,713,500 | 15,006,500 | 54,000,000 | 101,280,000 |
| 19 | Undelivered Orders | | 100 | - 100 | | |
| 20 | TOTAL OBLIGATIONS | | 3,713,600 | 15,006,400 | 54,000,000 | 101,280,000 |
| 21 | | | | | | |
| 22 | NON-FEDERAL CONTRIBUTIONS | | | | | |
| 23 | TOTAL COST | 130,000,000 | | 11,000,000 | 41,000,000 | 78,000,000 |
| 24 | Undelivered Orders | | | | | |
| 25 | TOTAL OBLIGATIONS | | | 11,000,000 | 41,000,000 | 78,000,000 |
| 26 | | | | | | |
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|---|---|---|---|
| EFFECTIVE DATE<br>1 JAN 86 | DIVISION NORTH ATLANTIC<br>DISTRICT BALTIMORE | REGION MIDDLE ATLANTIC<br>BASIN CHESAPEAKE BAY | PROJECT<br>BALTIMORE HARBOR AND CHANNELS, MARYLAND AND VIRGINIA |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE.

REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: Channels and Harbors (Navigation)

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM | PROJECT COST ESTIMATE | TOTAL TO 30 SEP 19 85 | CURRENT FY 19 86 | BUDGET FY 19 87 | BALANCE TO COMPLETE AFTER FY 19 87 |
|---|---|---|---|---|---|---|
| | (a) | (b) | (c) | (d) | (e) | (f) |
| 1 | METHOD OF FINANCING | | | | | |
| 2 | FEDERAL FUNDS | | | | | |
| 3 | ALLOCATIONS | | 3,735,000 | 14,985,000 1/ | | |
| 4 | UNOBLIGATED CARRYOVER FROM PRIOR YEAR | | | 21,400 | | |
| 5 | TOTAL FUNDS AVAILABLE FOR OBLIGATION | | | 15,006,400 | | |
| 6 | APPROPRIATIONS REQUIRED | | | | 54,000,000 2/ | 101,280,000 |
| 7 | | | | | | |
| 8 | NON-FEDERAL CONTRIBUTIONS | | | | | |
| 9 | CONTRIBUTED FUNDS | | | | | |
| 10 | UNOBLIGATED CARRYOVER FROM PRIOR YEAR | | | | | |
| 11 | TOTAL FUNDS AVAILABLE FOR OBLIGATION | | | | | |
| 12 | CONTRIBUTIONS REQUIRED | | | 11,000,000 | 41,000,000 | 78,000,000 |
| 13 | | | | | | |
| 14 | | | | | | |
| 15 | 1/ Reflects a $14,985,000 potential allocation for FY 1986. | | | | | |
| 16 | 2/ Obligation and expenditure of budgeted funds for construction of this project are contingent upon | | | | | |
| 17 | enactment of legislation enabling recovery of all or part of the costs to be expended by the | | | | | |
| 18 | project sponsor and the Federal Government. | | | | | |
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|---|---|---|---|
| EFFECTIVE DATE<br>1 JAN 86 | DIVISION NORTH ATLANTIC<br>DISTRICT BALTIMORE | REGION MIDDLE ATLANTIC<br>BASIN CHESAPEAKE BAY | PROJECT<br>BALTIMORE HARBOR AND CHANNELS, MARYLAND AND VIRGINIA |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE.

APPROPRIATION TITLE: Construction General - Channels and Harbors (Navigation)

PROJECT: Barnegat Inlet, New Jersey - Modification (Continuing)

LOCATION: Barnegat Inlet is located on the Atlantic Coast of New Jersey in Ocean County, approximately 32 miles northeast of Atlantic City. It lies partially in the municipality of Barnegat Light Borough and partially in Island Beach State Park.

AUTHORIZATION: The existing project was authorized by the Rivers and Harbors Act of 1935 and modified by the Acts of 1937 and 1946.

BENEFIT-COST RATIO: The remaining benefit-remaining cost ratio is not applicable since the remaining work is needed to ensure a channel suitable for navigation.

| SUMMARIZED FINANCIAL DATA | | Accum. % of Est Fed. Cost |
|---|---|---|
| Estimated Total Appropriation Requirement | $24,250,000 | |
| Future non-Federal Reimbursement | 1,150,000 | |
| Estimated Federal Cost (Ultimate) | 23,100,000 | |
| Estimated non-Federal Cost | 16,800,000 | |
| Cash Contribution 14,850,000 | | |
| Other Costs 800,000 | | |
| Reimbursements 1,150,000 | | |
| Total Estimated Project Cost | $39,900,000 | |
| Allocations to 30 September 1985 | $ 225,000 | |
| Conference Allowance for FY 1986 | $ 0 | |
| Potential Allocation for FY 1986 | $ 585,000 | |
| Potential Allocations thru FY 1986 | $ 810,000 | 3 |
| Allocation Requested for FY 1987 | $ 6,000,000 | |
| Scheduled Balance to Complete after FY 1987 | $16,290,000 | |
| Unscheduled Balance to Complete after FY 1987 | $ 0 | |

| STATUS: (1 Jan 1986) | PERCENT COMPLETE | COMPLETION SCHEDULE |
|---|---|---|
| Jetty | 0 | May 1990 |
| Channel | 0 | Nov 1990 |
| Jetty Sport Fishing Facilities | 0 | Nov 1990 |
| Entire Project | 0 | Nov 1990 |

PHYSICAL DATA

| | |
|---|---|
| New South Jetty: | 4,270 linear foot rubble mound structure with a top elevation of 8' above mean low water. |
| Jetty Sport Fishing: | Walkway along new jetty with steel railing for safety. |
| Channel: | 11,300 linear feet, 300 feet wide at a depth of 10 feet below mean low water. |

DIVISION: North Atlantic DISTRICT: Philadelphia REGION: Middle Atlantic

Barnegat Inlet, NJ

JUSTIFICATION: The project will modify the existing Federal navigation project at Barnegat Inlet. The existing Federal project at the inlet, which was completed in 1940 at a total cost of $749,000, has failed to maintain a fully suitable channel for navigation. The proposed modification consists of a new realigned south jetty and a wider and deeper navigation channel. Although the existing project has been substantially successful--some 800,000 transits are made annually--the problems of instability and hazardous navigation due to wave activity and channel shoaling create limitations for the present project, making navigation dangerous at times. The only approach to the inlet is from the north along Island Beach, taking vessels within 100 yards of the north jetty. As a result of shoaling, breakers occur across the entire outer bar thereby exposing all vessels to impact by severe waves as they enter the inlet entrance. Vessels smaller than 25' are in constant jeopardy of being capsized or pushed across the north jetty. Larger vessels face hampered navigating conditions. During the period 1970-1983 the U.S. Coast Guard assisted over 7600 vessels at Barnegat Inlet. As a result of capsizings at the inlet, during the period 1979-1983, 8 lives were lost and 35 lives saved. Three additional fatalities occurred during 1984. Since completion of the existing project in 1940, the Federal Government has expended approximately $8 million attempting to stabilize the condition. These maintenance activities have produced very short term improvements. With the structural modifications (the new south jetty and the improved navigation channel), the shoaling in the immediate area of the inlet entrance would be reduced enabling the navigation project to function in a fully suitable and safe manner. Without structural modification (new south jetty), the problems of instability and hazardous navigation due to wave activity and channel shoaling will continue to exist.

| Benefits | Amount<br>(1 October 1985) |
|---|---|
| Jetty Sport Fishing | 159,000 |
| Recreation Boating | 5,695,000 |
| Reduction of Vessel Damage | 76,000 |
| Headboat and Charter Sport Fishing | 431,000 |
| Commercial Fishing | 1,955,000 |
| TOTAL | $8,316,000 |

FISCAL YEAR 1987: The requested funding will be used to continue construction of the new south jetty. The funds will be applied as follows:

| | |
|---|---|
| Jetty Construction | $5,600,000 |
| Engineering and Design | 120,000 |
| Supervision and Administration | 280,000 |
| Total | $6,000,000 |

NON-FEDERAL COST: Consistent with the cost-sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, local interests will be required to provide lands, easements, rights-of-way, and required disposal areas presently estimated at $800,000. Local interests will be required to pay one-half of the separable and joint costs allocated to recreation, presently estimated at $13,700,000, and bear all costs of operation, maintenance, and replacement of recreation facilities, pay 10 percent of the costs allocated to commercial navigation during construction, presently estimated at $ 1,150,000, and pay an additional 10 percent of the costs allocated to commercial navigation within a period of 30 years following completion, presently estimated at $1,150,000.

**STATUS OF LOCAL COOPERATION:** In a letter dated 19 July 1984, the State of New Jersey indicated its willingness to provide the required items of local cooperation, as presented in the General Design Memorandum dated September 1981.

**COMPARISON OF FEDERAL COST ESTIMATE:** The current Federal (Corps of Engineers) cost estimate of $23,100,000 is an increase of $3,200,000 over the last estimate ($19,900,000) submitted to Congress for FY 1985. The change is due to an increase of $206,000 resulting from adding jetty sport fishing facilities in accordance with the final Phase II GDM; a reduction of $449,000 for the elimination of the existing project cost; an increase of $1,943,000 from price level rises; and an increase of $1,500,000 for estimated inflation from 1 October 1985 through the construction period.

**STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT:** A Final Environmental Impact Statement was filed with CEQ on 8 October 1976. A Supplemental Information Report to the Final EIS was completed in September 1981 as part of Legislative Phase I studies for the project and filed with EPA on 9 July 1982. The provisions of Section 404 of the Clean Water Act were met by a Section 404(b) (1) Evaluation on 23 December 1983, a Public Notice issued on 8 November 1983, a Certification from the State of New Jersey on 30 September 1983, and the District Commander's signature on a Finding of No Significant Impact on 24 August 1984.

**OTHER INFORMATION:** Funds to initiate construction were appropriated in FY 1985.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE

Division: North Atlantic
District: Philadelphia

Project: Barnegat Inlet, New Jersey

|  | Estimates Presented to Congress ($1,000) |  |  |  |  |
|---|---|---|---|---|---|
| Item | Original Baseline | Cumulative Changes | Last | Incremental Change | Current |
| Federal Cost<br>(Price Level) | $19,900<br>(Oct 1983) |  | $19,900<br>(Oct 1983) |  | $23,100 1/ |
| Reason for Changes |  | 0 |  | (+3,200) 1/ |  |
| a. Price Escalation (Construction Features) |  | 0 |  | 3,443 |  |
| b. Design Changes |  | 0 |  | 206 2/ |  |
| c. Additional Function Added Under General Authority |  | 0 |  | 0 |  |
| d. Authorized Modification |  | 0 |  | 0 |  |
| e. Post-Contract Award and Other Estimating Adjustments |  | 0 |  | 0 |  |
| f. Schedule Changes |  | 0 |  | 0 |  |
| g. Sundry |  | 0 |  | -449 3/ |  |
| h. Price Escalation (Real Estate) |  | 0 |  | 0 |  |

1/ Includes $1,500,00 for estimated inflation from 1 October 1985 through the construction period.
2/ Due to changes in accordance with the final Phase II GDM to reflect the addition of jetty sport fishing facilities.
3/ Due to the reduction for the Federal cost of the existing project.

REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: NAVIGATION

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 1986 AND 1987

| LINE NO | ITEM (a) | PROJECT COST ESTIMATE (b) | TOTAL TO 30 SEP 1985 (c) | CURRENT FY 1986 (d) | BUDGET FY 1987 (e) | BALANCE TO COMPLETE AFTER FY 1987 (f) |
|---|---|---|---|---|---|---|
| 1 | LANDS, EASEMENTS, RIGHTS OF WAY | 0 | 0 | 0 | 0 | 0 |
| 2 | CHANNELS | 5,100,000 | 0 | 0 | 0 | 5,100,000 |
| 3 | BREAKWATERS & SEAWALLS - Jetties | 31,000,000 | 0 | 800,000 | 9,100,000 | 21,100,000 |
| 4 | RECREATION FACILITIES | 400,000 | 0 | 0 | 0 | 400,000 |
| 5 | ENGINEERING AND DESIGN | 900,000 | 215,000 | 75,000 | 150,000 | 460,000 |
| 6 | SUPERVISION AND ADMINISTRATION | 1,700,000 | 10,000 | 80,000 | 450,000 | 1,160,000 |
| 7 | | | | | | |
| 8 | TOTAL FEDERAL AND NON-FEDERAL COSTS | 39,100,000 | 225,000 | 955,000 | 9,700,000 | 28,220,000 |
| 9 | UNDISTRIBUTED COSTS - NONE | | | | | |
| 10 | TOTAL PROJECT COSTS | 39,100,000 | 225,000 | 955,000 | 9,700,000 | 28,220,000 |
| 11 | PENDING ADJUSTMENTS - NONE | | | | | |
| 12 | TOTAL COSTS | 39,100,000 | 225,000 | 955,000 | 9,700,000 | 28,220,000 |
| 13 | UNDELIVERED ORDERS - NONE | | | | | |
| 14 | TOTAL OBLIGATIONS | | | | | |
| 15 | TOTAL FEDERAL FUNDS | 23,100,000 | 225,000 | 585,000 | 6,000,000 | 16,290,000 |
| 16 | TOTAL NON-FEDERAL FUNDS | 16,000,000 | 0 | 370,000 | 3,700,000 | 11,930,000 |
| 17 | | | | | | |
| 18 | | | | | | |
| 19 | METHOD OF FINANCING | | | | | |
| 20 | FEDERAL FUNDS | 23,100,000 | | | | |
| 21 | ALLOCATIONS | | 225,000 | 585,000 1/ | | |
| 22 | UNOBLIGATED CARRYOVER PRIOR YEAR | | | 15,000 | 0 | 0 |
| 23 | APPROPRIATION REQUIRED | | | | 6,000,000 | 16,290,000 |
| 24 | NON-FEDERAL FUNDS (CONTRIBUTIONS ONLY) | 16,000,000 | | | | |
| 25 | CONTRIBUTIONS | | 0 | | | |
| 26 | UNOBLIGATED CARRYOVER | | | 0 | 0 | 0 |
| 27 | CONTRIBUTIONS REQUIRED | | | 370,000 | 3,700,000 | 11,930,000 |
| 28 | | | | | | |
| 29 | | | | | | |
| 30 | | | | | | |
| 31 | 1/ Based on current project schedule. | | | | | |
| 32 | | | | | | |
| 33 | | | | | | |

| | | | |
|---|---|---|---|
| EFFECTIVE DATE<br>JANUARY 1986 | DIVISION NORTH ATLANTIC<br>DISTRICT PHILADELPHIA | REGION MIDDLE ATLANTIC<br>BASIN DELAWARE RIVER | PROJECT<br>BARNEGAT INLET, NEW JERSEY |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE.

APPROPRIATION TITLE: Construction General - Channels and Harbors (Navigation)

PROJECT: Kill Van Kull and Newark Bay, New York and New Jersey (Continuing)

LOCATION: The project is located in New York Harbor five to eight miles southwesterly of the Battery, New York City between Staten Island, New York, and Bayonne, New Jersey.

AUTHORIZATION: FY 1985 Supplemental Appropriations Act (PL 99-88).

BENEFIT-COST RATIO: The remaining benefit-remaining cost ratio is 7.3 to 1 at 8-1/8 percent. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1985) was 6.9 to 1. The benefit-cost ratio is based on the project functioning independently.

| SUMMARIZED FINANCIAL DATA | | |
|---|---|---|
| Estimated Appropriation Requirement | | $191,000,000 |
| Scheduled Construction | $109,000,000 | |
| Unscheduled Construction | 82,000,000 | |
| Future Non-Federal Reimbursement | | 25,500,000 |
| Scheduled Construction | 14,500,000 | |
| Unscheduled Construction | 11,000,000 | |
| Estimated Federal Cost (ultimate) | | 165,500,000 |
| Scheduled Construction | 94,500,000 | |
| Unscheduled Construction | 71,000,000 | |

| Status (1 January 1986) | PERCENT COMPLETED | COMPLETION SCHEDULE |
|---|---|---|
| Scheduled | | |
| Kill Van Kull Channel | 0 | Sep 1989 |
| Newark Bay Channel | 0 | Sep 1989 |
| Unscheduled | | |
| Deepening all channels to authorized depth | 0 | Indefinite1/ |

1/ See Other Information

PHYSICAL DATA

Dredging of about 5 miles of the Kill Van Kull Channel to 45 feet with widenings at Robins Reef, St. George and Bergen Point; dredging of about 3 miles of the Newark Bay Main Channels to 45 feet, with widening at the site of the Central Railroad Bridge (being removed by the US Coast Guard) and the junction with the Port Newark Channel; also dredging of a turning basin at Port Elizabeth; dredging of about 5 miles of pierhead channel at Port Newark and Port Elizabeth, also to 45 feet

| | | | |
|---|---|---|---|
| Estimated Non-Federal Cost | | | 164,500,000 |
| Scheduled Construction | | 122,100,000 | |
| Cash Contributions | $36,300,000 | | |
| Other Costs | 71,300,000 | | |
| Reimbursements | 14,500,000 | | |
| Unscheduled Construction | | 42,400,000 | |
| Cash Contribution | 27,300,000 | | |
| Other Costs | 4,100,000 | | |
| Reimbursement | 11,000,000 | | |
| Total Estimated Scheduled Construction Cost | | | 216,600,000 |
| Total Estimated Unscheduled Construction Cost | | | 113,400,000 |
| Total Estimated Project Cost | | | 330,000,000 |

| | | Accum. % of Est. Fed. Cost (C of E Cost) |
|---|---|---|
| Allocations to 30 September 1985 | $ 15,000 | |
| Conference Allowance for FY 1986 | 600,000 | |
| Potential Allocation for FY 1986 | 585,000 2/ | |
| Potential Allocations through FY 1986 | 600,000 | |
| Allocation Requested for FY 1987 | 12,000,000 3/ | 7 |
| Scheduled Balance to complete after FY 1987 | 96,400,000 | |
| Unscheduled Balance to Complete after FY 1987 | 82,000,000 | |

2/ Based on current project schedule.

3/ Obligation and expenditure of budgeted funds for construction of this project are contingent upon enactment of legislation enabling recovery of all or part of the costs to be expended by the project sponsor and the Federal Government in accordance with the agreement between the Administration and the Senate Majority Leadership.

JUSTIFICATION: Cargo handled at Port Newark and Port Elizabeth, which together comprise the nation's largest containerport, is about 13 tons per year. The present 35-foot channels in the Kill Van Kull and Newark Bay Channels preclude present generation containerships from fully loading and will further hamper future fleets of larger draft vessels. The estimated annual average benefits, all commercial navigation, based on 1 October 1985 prices are $245,300,000.

FISCAL YEAR 1987: The requested amount will be applied as follows:

| | |
|---|---:|
| Initiate Dredging | $11,625,000 |
| Engineering and Design | 262,000 |
| Supervision & Administration | 113,000 |
| Total | $12,000,000 |

NON-FEDERAL COSTS: Consistant with the cost-sharing and financing concepts agreed to by the Administration and the Senate Majority leadership, local interests will be required to relocate utilities, presently estimated at $3,700,000, and berth dredging, presently estimated at $67,600,000. Local interests have agreed to pay 25 percent of the costs allocated to deep draft navigation during construction, presently estimated at $36,300,000 and an additional 10 percent thereof amortized over 30 years after completion. Local interests have also agreed to make all required payments and voluntary contributions concurrently with project construction.

STATUS OF LOCAL COOPERATION: The Port Authority of New York and New Jersey, the local sponsor, provided a letter on 28 August 1985 indicating its willingness to comply with the terms of the Administration's cost-sharing policy as well as traditional items of local cooperation.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal Cost Estimate of $191,000,000 is an increase of $34,000,000 over the latest estimate ($157,000,000) presented to Congress (FY1985). This change includes increases of $11,200,000 based on higher price levels to 1 October 1985; and $25,000,000 for an estimated inflation allowance from 1 October 1985 through the construction period. These increases were partially offset by decrease of $2,200,000 for re-analysis of requirements.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: A draft Supplemental Environmental Impact Statement will be completed in the second quarter of 1986 and the final supplement is expected to be filed with EPA in the third quarter of 1986.

The provisions of Section 404 of the Clean Water Act will be met by Section 404(b)(1) evaluation in the third quarter of 1986. Water quality certification was granted by New Jersey on 17 September 1985 and by New York on 3 October 1985.

OTHER INFORMATION: Initial planning funds were appropriated in 1984. Preconstruction planning will be completed in September 1986. This project was included among those to be started under the FY 1985 Supplemental Appropriations Act. The first phase of the project will provide a channel deepening to 40 feet. The remaining work (deepening the channels to authorized depth) which is not scheduled at this time will be scheduled later in conjunction with the desires of local interests.

HISTORICAL CHANGES IN THE BASELINE FEDERAL COST ESTIMATE:

Division: North Atlantic
District: New York
PROJECT: Kill Van Kull and Newark Bay, N.Y. & N.J.

| | | Estimates Presented to Congress ($1,000) | | | |
|---|---|---|---|---|---|
| Item | Original Baseline | Cumulative Changes | Last | Incremental Change | Current |
| Federal Cost<br>(Price Level) | 157,000<br>(Oct 83) | | 157,000<br>(Oct 83) | | 191,000 2/ |
| Reason for Change | | | | (34,000) 2/ | |
| a. Price Escalation | | 0 | | 36,200 | |
| b. Design Changes | | 0 | | 0 | |
| c. Additional Functions Added Under General Authority | | 0 | | 0 | |
| d. Authorized Modifications | | 0 | | 0 | |
| e. Post-Contract Award and Other Estimating Adjustments | | 0 | | -2,200 1/ | |
| f. Schedule Changes | | 0 | | 0 | |
| g. Sundry | | 0 | | 0 | |
| h. Price Escalation (Real Estate) | | 0 | | 0 | |

1/ Reanalysis of requirements.

2/ Includes $25,000 allowance for estimated inflation from 1 October 1985 through the construction period.

REPORTS CONTROL SYMBOL:

| | |
|---|---|
| APPROPRIATION TITLE: CONSTRUCTION GENERAL | CLASSIFICATION:<br>CHANNELS AND HARBORS (NAVIGATION) |

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM (a) | PROJECT COST ESTIMATE (b) | TOTAL TO 30 SEP 19 85 (c) | CURRENT FY 19 86 (d) | BUDGET FY 19 87 (e) | BALANCE TO COMPLETE AFTER FY 19 87 (f) |
|---|---|---|---|---|---|---|
| 1 | CHANNELS CONSTRUCTION | 241,000,000 | | | 15,500,000 | 225,500,000 |
| 2 | ENGINEERING & DESIGN | 3,400,000 | | 500,000 | 350,000 | 2,550,000 |
| 3 | SUPERVISION AND ADMINISTRATION | 10,200,000 | | 100,000 | 150,000 | 9,950,000 |
| 4 | TOTAL APPLIED COST (FED & NON-FED) | 254,600,000 | | 600,000 | 16,000,000 | 238,000,000 |
| 5 | UNDISTRIBUTED COSTS (NONE) | | | | | |
| 6 | TOTAL PROJECT COST | 254,600,000 | | 600,000 | 16,000,000 | 238,000,000 |
| 7 | FUNDING ADJUSTMENT | | | | | |
| 8 | TOTAL COST (FED & NON-FED CONTRIBS) | 254,600,000 | | 600,000 | 16,000,000 | 238,000,000 |
| 9 | UNDELIVERED ORDERS | | | | | |
| 10 | TOTAL OBLIGATIONS | 254,600,000 | | 600,000 | 16,000,000 | 238,000,000 |
| 11 | | | | | | |
| 12 | FEDERAL FUNDS | | | | | |
| 13 | TOTAL APPLIED COST | 191,000,000 | | 600,000 | 12,000,000 | 178,400,000 |
| 14 | UNDISTRIBUTED COTS (NONE) | | | | | |
| 15 | TOTAL PROJECT COST | 191,000,000 | | 600,000 | 12,000,000 | 178,400,000 |
| 16 | PENDING ADJUSTMENTS | | | | | |
| 17 | TOTAL COST | 191,000,000 | | 600,000 | 12,000,000 | 178,400,000 |
| 18 | UNDELIVERED ORDERS (NONE) | | | | | |
| 19 | TOTAL OBLIGATION | | | 600,000 | 12,000,000 | 178,400,000 |
| 20 | | | | | | |
| 21 | NON-FEDERAL FUNDS | | | | | |
| 22 | TOTAL APPLIED COST | 63,500,000 | | | 4,000,000 | 59,600,000 |
| 23 | UNDISTRIBUTED COST | | | | | |
| 24 | TOTAL PROJECT COST | 63,600,000 | | | 4,000,000 | 59,600,000 |
| 25 | PENDING ADJUSTMENTS | | | | | |
| 26 | TOTAL COST | 63,600,000 | | | 4,000,000 | 59,600,000 |
| 27 | UNDELIVERED ORDERS | | | | | |
| 28 | TOTAL OBLIGATIONS | | | | 4,000,000 | 59,600,000 |
| 29 | | | | | | |
| 30 | | | | | | |
| 31 | | | | | | |
| 32 | | | | | | |
| 33 | | | | | | |

| | | | |
|---|---|---|---|
| EFFECTIVE DATE<br>1 Jan 36 | DIVISION NORTH ATLANTIC<br>DISTRICT NEW YORK | REGION MIDDLE ATLANTIC<br>BASIN NY METROPOLITAN | PROJECT KILL VAN KULL AND NEWARK BAY CHANNELS, NY & NJ |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE.

REPORTS CONTROL SYMBOL:

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: CHANNELS AND HARBORS (NAVIGATION)

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM (a) | PROJECT COST ESTIMATE (b) | TOTAL TO 30 SEP 19 85 (c) | CURRENT FY 1986 (d) | BUDGET FY 1987 (e) | BALANCE TO COMPLETE AFTER FY 19 87 (f) |
|---|---|---|---|---|---|---|
| 1 | METHOD OF FINANCING | | | | | |
| 2 | FEDERAL FUNDS | 191,000,000 | | | | |
| 3 | ALLOCATIONS | | 15,000 | 585,000 | | |
| 4 | UNOBLIGATION C/O FROM PRIOR YEAR | | -15,000 | 15,000 | | |
| 5 | TOTAL FUNDS AVAILABLE FOR OBLIG | | | 600,000 | | |
| 6 | APPROPRIATION REQUIRED | | | | 12,000,000 | 178,400,000 |
| 7 | | | | | | |
| 8 | NON-FEDERAL FUNDS | | | | | |
| 9 | CASH CONTRIBUTIONS | 63,600,000 | | | 4,000,000 | 59,600,000 |
| 10 | OTHER COSTS | | | | | |
| 11 | RELOCATION UTILITIES | 3,700,000 | | | 1,800,000 | 1,900,000 |
| 12 | BERTH DREDGING | 71,700,000 | | | | 71,700,000 |
| 13 | TOTAL NON-FEDERAL COST (OTHER) | 75,400,000 | | | 1,800,000 | 73,600,000 |
| 14 | | | | | | |
| 15 | | | | | | |
| 16 | | | | | | |
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| | | | |
|---|---|---|---|
| EFFECTIVE DATE<br>1 JAN 1986 | DIVISION NORTH ATLANTIC<br>DISTRICT NEW YORK | REGION MIDDLE ATLANTIC<br>BASIN NY METROPOLITAN | PROJECT KILL VAN KULL AND NEWARK BAY CHANNELS, NY & NJ |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986

APPROPRIATION TITLE: Construction General Channels and Harbor (Navigation)

PROJECT: Moriches Inlet, New York (Continuing)

LOCATION: The project is located in the Township of Brookhaven in Suffolk County, New York approximately 80 miles east of the Battery, New York City and 52 miles west of Montauk Point.

AUHTORIZATION: 1960 River and Habor Act

BENEFIT TO COST RATIO: The remaining benefit-remaining cost ratio is 3.4 to 1 at a 8-1/8 percent. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1985) was 3.8 to 1. The benefit-cost ratio is based on the project functioning independently.

| SUMMARIZED FINANCIAL DATA | | | Accum % of Est Fed Cost |
|---|---|---|---|
| Estimated Federal Cost | $ 5,000,000 | | |
| Estimated Non-Federal Cost | 5,000,000 | | |
| Cash Contribution: 5,000,000 | | | |
| Other Costs 0 | | | |
| Total Estimated Project Cost | 10,000,000 | | |
| Allocation to 30 September 1985 | 1,046,000 | | |
| Conference Allowance for FY 1986 | 0 | | |
| Potential Allocation for FY 1986 | 165,000 | 1/ | |
| Potential Allocations through FY 1986 | 1,211,000 | | 24 |
| Allocation Requested for FY 1987 | 2,500,000 | | 74 |
| Scheduled Balance to Complete after FY 1987 | 1,289,000 | | |
| Unscheduled Balance to Complete after FY 1987 | 0 | | |

| STATUS (1 January 1986) | Percent Completed | Completion Schedule |
|---|---|---|
| Channels | 0 | April 1988 |
| Jetties | 0 | June 1988 |
| Entire Project | 0 | June 1988 |

PHYSICAL DATA-(FEET)

Channels

Outer Channel: 3,696 ft long x 200 ft wide x 10 ft deep.
Inner Channel: 5,808 ft long x 100 ft wide x 6 ft deep.

Jetties

East Jetty 800 feet, with a top elevation of 9 feet above mean low water.
West Jetty 2,200 feet, with a top elevation of 9 feet above mean low water.

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1/ Based on current project schedule.

Division: North Atlantic District: New York Region: Middle Atlantic

Moriches Inlet, NY

JUSTIFICATION: Moriches Bay and the adjacent ocean areas constitute an important marine fishery. The Long Island resort region affords recreation to hundreds of thousands of people participating in fishing, boating and bathing activities. Many hotels, tourist homes, yacht clubs, boatyards, public wharves and landings, and numerous private landings are in the area. Access from the ocean to these facilities is limited to a controlling depth in the inlet of about 6 feet.

The U.S. Coast Guard presently notifies mariners that the conditions at Moriches Inlet are extremely hazardous and that navigation of the inlet is considered unsafe at any time. The plan of improvement would provide adequate and safe access for boats. Also, the project would provide refuge, reduce damage to vessels and greatly enhance recreational boating. The estimated average annual benefits, based on 1 October 1985 prices, are as follows:

| | Annual Benefits |
|---|---|
| Commercial Navigation | $ 101,000 |
| Recreation Boating | 8,952,000 |
| Harbor Refuge | 35,000 |
| Total Annual Benefits | $9,088,000 |

FISCAL YEAR 1987: The requested amount will be applied as follows:

| | |
|---|---|
| Initiate jetty construction | $2,350,000 |
| Engineering & Design | 95,000 |
| Supervision & Administration | 55,000 |
| TOTAL | $2,500,000 |

NON-FEDERAL COSTS: Consistent with the cost-sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, local interests will be required to provide lands, easements, rights-of-way, and required disposal areas; pay $1,810,000 annually for maintenance and pay 50 percent of the costs allocated to shallow draft navigation during construction presently estimated at $5,000,000. Local interests have agreed to make all required payments and voluntary contributions concurrently with project construction.

STATUS OF LOCAL COOPERATION: The New York State Department of Environmental Conservation, the local sponsor, in a 6 January 1983 letter, indicated its intent to comply with the items of local cooperation and reaffirmed this on 8 November 1985.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal Cost Estimate of $5,000,000 is a increase of $2,640,000 over the latest estimate ($2,360,000) presented to Congress (FY 1985). The change is due to an increase of $160,000 for price level increases to 1 October 1985, $200,000 for estimated inflation allowance from 1 October 1985 through the construction period and $2,280,000 for changes in the condition of the jetties following the March 1984 coastal storm.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT (EIS) AND SECTION 404 REQUIREMENTS: The final EIS was filed with EPA 1 July 1983. The provisions of Section 404 of the Clean Water Act have been met by a 404 (b) (1) evaluation, contained in the EIS. No state water quality permit is required.

OTHER INFORMATION: Initial planning funds were appropriated in FY 1967. Precontruction planning was completed in FY 1984. This project was included among those to be started under the FY 1985 Supplemental Appropriations Act.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

**Division:** North Atlanti
**District:** New York

Project: Moriches Inlet, New York

| | Estimates Presented to Congress ($1,000) | | | | |
|---|---|---|---|---|---|
| Item | Original Baseline | Cumulative Changes | Last | Incremental Change | Current |
| Federal Cost<br>(Price Level) | 2,360<br>(Oct. 83) | | 2,360<br>(Oct 83) | | 5,000 1/ |
| Reason for Change | | | | (2,640) 1/ | |
| a. Price Escalation (Construction Features) | | | | 360 | |
| b. Design Changes | | | | | |
| c. Additional Functions Added Under General Authority | | | | 0 | |
| d. Authorized Modifications | | | | 0 | |
| e. Post-Contract Award and Other Estimating Adjustments | | | | 2,280 2/ | |
| f. Schedule Changes | | | | 0 | |
| g. Sundry | | | | 0 | |
| h. Price Escalation (real Estate) | | | | 0 | |

1/ Includes $200,000 allowance for estimated inflation from 1 October 1985 thru the construction period.

2/ For changed jetty conditions following March 1984 coastal storm.

REPORTS CONTROL SYMBOL:

| | |
|---|---|
| APPROPRIATION TITLE: CONSTRUCTION GENERAL | CLASSIFICATION: CHANNELS AND HARBORS (NAVIGATION) |

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 1986 AND 1987

| LINE NO | ITEM (a) | PROJECT COST ESTIMATE (b) | TOTAL TO 30 SEP 1985 (c) | CURRENT FY 1986 (d) | BUDGET FY 1987 (e) | BALANCE TO COMPLETE AFTER FY 1987 (f) |
|---|---|---|---|---|---|---|
| 1 | CHANNELS | 1,950,000 | | | | 1,950,000 |
| 2 | JETTIES | 6,220,000 | | | 4,700,000 | 1,520,000 |
| 3 | ENGINEERING & DESIGN | 1,260,000 | 760,000 | 160,000 | 190,000 | 150,000 |
| 4 | SUPERVISION AND ADMINISTRATION | 570,000 | 286,000 | 20,000 | 110,000 | 154,000 |
| 5 | TOTAL APPLIED COST (FED & NON-FED) | 10,000,000 | 1,046,000 | 180,000 | 5,000,000 | 3,774,000 |
| 6 | UNDISTRIBUTED COSTS (NONE) | | | | | |
| 7 | TOTAL PROJECT COST | 10,000,000 | 1,046,000 | 180,000 | 5,000,000 | 3,774,000 |
| 8 | FUNDING ADJUSTMENT (NONE) | | | | | |
| 9 | TOTAL COST (FED & NON-FED CONTRIBS) | 10,000,000 | 1,046,000 | 180,000 | 5,000,000 | 3,774,000 |
| 10 | UNDELIVERED ORDERS | | | | | |
| 11 | TOTAL OBLIGATIONS | | 1,046,000 | 180,000 | 5,000,000 | 3,774,000 |
| 12 | | | | | | |
| 13 | FEDERAL FUNDS | | | | | |
| 14 | TOTAL APPLIED COST | 5,000,000 | 1,046,000 | 180,000 | 2,500,000 | 1,274,000 |
| 15 | UNDISTRIBUTED COST (NONE) | | | | | |
| 16 | TOTAL PROJECT COST | 5,000,000 | 1,046,000 | 180,000 | 2,500,000 | 1,274,000 |
| 17 | PENDING ADJUSTMENTS | | | | | |
| 18 | TOTAL COST | 5,000,000 | 1,046,000 | 180,000 | 2,500,000 | 1,274,000 |
| 19 | UNDELIVERED ORDERS (NONE) | | | | | |
| 20 | TOTAL OBLIGATION | | 1,046,000 | 180,000 | 2,500,000 | 1,274,000 |
| 21 | | | | | | |
| 22 | NON-FEDERAL FUNDS | | | | | |
| 23 | TOTAL APPLIED COST | 5,000,000 | | | 2,500,000 | 2,500,000 |
| 24 | UNDISTRIBUTED COST | | | | | |
| 25 | TOTAL PROJECT COST | 5,000,000 | | | 2,500,000 | 2,500,000 |
| 26 | PENDING ADJUSTMENTS | | | | | |
| 27 | TOTAL COST | 5,000,000 | | | 2,500,000 | 2,500,000 |
| 28 | UNDELIVERED ORDERS | | | | | |
| 29 | TOTAL OBLIGATIONS | | | | 2,500,000 | 2,500,000 |
| 30 | | | | | | |
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|---|---|---|---|
| EFFECTIVE DATE 1 JAN 1986 | DIVISION NORTH ATLANTIC<br>DISTRICT NEW YORK | REGION MIDDLE ATLANTIC<br>BASIN NY METROPOLITAN | PROJECT MORICHES INLET, NY |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE.

REPORTS CONTROL SYMBOL:

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: CHANNELS AND HARBORS (NAVIGATION)

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM (a) | PROJECT COST ESTIMATE (b) | TOTAL TO 30 SEP 19 85 (c) | CURRENT FY 19 86 (d) | BUDGET FY 19 87 (e) | BALANCE TO COMPLETE AFTER FY 19 87 (f) |
|---|---|---|---|---|---|---|
| 1 | METHOD OF FINANCING | | | | | |
| 2 | FEDERAL FUNDS | 5,000,000 | | | | |
| 3 | ALLOCATIONS | | 1,046,000 | 165,000 | | |
| 4 | UNOBLIGATION c/o FROM PRIOR YEAR | | -15,000 | 15,000 | | |
| 5 | TOTAL FUNDS AVAILABLE FOR OBLIGATION | | | 180,000 | | |
| 6 | APPROPRIATION REQUIRED | | | | 2,500,000 | 1,274,000 |
| 7 | | | | | | |
| 8 | NON-FEDERAL FUNDS | | | | | |
| 9 | CASH OBLIGATIONS | 5,000,000 | | | 2,500,000 | 2,500,000 |
| 10 | OTHER COSTS | | | | | |
| 11 | TOTAL NON-FEDERAL COST | 5,000,000 | | | 2,500,000 | 2,500,000 |
| 12 | | | | | | |
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| EFFECTIVE DATE<br>1 JAN 1986 | DIVISION NORTH ATLANTIC<br>DISTRICT NEW YORK | REGION MIDDLE ATLANTIC<br>BASIN NY METROPOLITAN | PROJECT<br>MORICHES INLET, NY |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE.

APPROPRIATION TITLE: Construction General - Channels and Harbors (Navigation)

PROJECT: New York Harbor Collection and Removal of Drift, New York & New Jersey (Continuing)

LOCATION: The project covers all of the Port of New York including shores and tidal tributaries of Sandy Hook and Raritan Bays, Raritan River, Arthur Kill, Kill Van Kull, Lower New York Bay, Passaic and Hackensack Rivers, Upper New York Bay, Lower Hudson River, Harlem and East Rivers, western part of Long Island Sound, and Jamaica Bay. It encompasses 8 New Jersey and 7 New York Counties. The port embraces about 1,500 square miles. It has frontage of 755 miles, measured along the shoreline of its navigable waters of which 460 miles are in New York and 295 miles in New Jersey.

AUTHORIZATION: Water Resources Development Act of 1974, modified by the Water Resources Development Act of 1976.

BENEFIT TO COST RATIO: The remaining benefit-remaining cost ratio is 5.3 to 1 at 5 7/8 percent. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction (FY 1975) was 6.3 to 1. The benefit to cost ratio is based upon the project functioning independently.

| SUMMARIZED FINANCIAL DATA | | | Accum. % of Est. Fed. Cost |
|---|---|---|---|
| Estimated Federal Cost | | 50,800,000 | |
| Estimated Non-Federal Cost | | 79,800,000 | |
| Cash Contribution | $25,400,000 | | |
| Other Costs | $54,400,000 | | |
| Total Estimated Project Costs | | 130,600,000 | |
| | | | |
| Allocation to 30 September 1985 | | $17,229,000 | |
| Conference Allowance for FY 1986 | | 3,700,000 | |
| Allocation for FY 1986 | | 2,200,000 2/ | |
| Allowance to date | | 19,429,000 | 38 |
| Allocation Requested for FY 1987 | | 4,600,000 | 47 |
| Scheduled Balance to Complete after FY 1987 | | 26,771,000 | |
| Unscheduled Balance to Complete after 1987 | | 0 | |

1/ Construction costs limited to $14,000,000 by Sec 91, PL 93-251, amended to $28,725,000 by Sec 116, PL 94-587

2/ Reflects $1,500,000 reduction assigned as Savings and Slippage.

| STATUS (1 January 1986) | Percent Complete | Completion Schedule |
|---|---|---|
| Liberty State Park contracts 1-5 | 100 | |
| East River | 100 | |
| East River Piers 17 & 18 | 100 | |
| Elizabeth | 100 | |
| Stapleton, Staten Island | 100 | |
| Hoboken | 100 | |

DIVISION: NORTH ATLANTIC DISTRICT: NEW YORK REGION: MIDDLE ATLANTIC

NY HARBOR COLLECTION & REMOVAL OF DRIFT, NY & NJ

| STATUS (1 January 1986) | Complete | Schedule |
|---|---|---|
| Jersey City South | 100 | |
| Jersey City North | 0 | Sep 1990 |
| Shooters Island | 0 | Dec 1988 |
| Weehawken to Edgewater I | 70 | Jun 1986 |
| Weehawken to Edgewater II | 0 | Dec 1988 |
| Brooklyn Section 1 | 0 | Sep 1988 |
| Brooklyn Section 2 | 0 | Sep 1991 |
| Bayonne | 0 | Jun 1989 |
| Arthur Kill, NJ | 0 | Sep 1991 |
| Manhattan | 0 | Sep 1991 |
| Newark Bay | 0 | Sep 1992 |
| Jamaica Bay | 0 | Feb 1993 |
| Staten Island (Balance) | 0 | Feb 1993 |
| Raritan and Sandy Hook Bays | 0 | Feb 1993 |
| Hudson River to Long Isl Sound | 0 | Feb 1993 |
| East River to Long Isl Sound | 0 | Feb 1993 |
| Entire Project | 29 | Feb 1993 |

PHYSICAL DATA

CHANNELS: Collect and remove about 29.2 million cubic feet of drift in NY Harbor from 2,230 derelict vessels, 149 deteriorated piers and wharves, other deteriorated non-repairable structures, debris lying along the shores, 182 repairable piers and wharves and other repairable shore structures.

JUSTIFICATION: In spite of the existing Federal program for collection and removal of drift in navigable harbor waters, an estimated 17,800 commercial, public and recreational vessels collide annually with drift causing damage to propellers, shafts and hulls. Average annual repair costs and other economic losses for 1985 are estimated to exceed $43,700,000. Drift cluttering recreational shores menaces swimmers and spreads marine borer infestation. The sources of drift deface the waterfront, prevent optimum use of property and depress property values. Fire hazards would be reduced by removing more than 100 unused deteriorated piers and other structures which contain much inflammable material. Uncontrolled burning of inflammable material adds to an existing air pollution problem. Elimination of drift from sources such as derelict vessels, deteriorated shore structures and debris along shores would contribute to reduced water pollution by decreasing the available amount of organic material in harbor waters. The 160 piers in use, which would be repaired or removed under the improvement, presently constitute a hazard to employees working on those structures. The almost 2,200 derelict vessels in shoal waters, and over 100 unused deteriorated piers, are an unattractive nuisance and a potential area for injuries or loss of life.

The project would improve existing conditions in the harbor and meet immediate and future needs of commercial vessels and recreational boating. The existing Federal laws cover removal and prevention of obstruction to navigation. Existing applicable local laws in the project area are not geographically inclusive and are almost entirely lacking in New Jersey municipalities. Upon completion of improvements in political or physical subdivision of the improvement area, local interests would be responsible for enacting and enforcing laws controlling sources of drift.

The project is located in the vicinity of Middlesex, Union, Essex, Passaic, Hudson, and Bergen counties (New Jersey) and Bronx, Queens, New York, Kings and Richmond counties (New York). The average annual benefits are as follows:

| Benefits | Amount (1 October 1985) |
|---|---|
| Commercial and Public Vessels (damages prevented) | $25,180,000 |
| Recreational Boats | 15,923,000 |
| Real Estate Enhancement | 588,000 |
| Removal of drift in water under existing Federal project | 198,000 |
| Removal of drift from recreational beaches | 3,653,000 |
| Detrimental effect from removal of deteriorated shore structures in use | -1,805,000 |
| TOTAL | $43,737,000 |

FISCAL YEAR 1987: The requested amount will be applied as follows:

| | |
|---|---|
| Continue Contract on Weehawken to Edgewater II | 1,830,000 |
| Continue Contract on Brooklyn One | 880,000 |
| Initiate Contract on Shooter's Island & Bayonne | 1,290,000 |
| Engineering and Design | 290,000 |
| Supervision and Administration | 310,000 |
| TOTAL | $4,600,000 |

The requested amount provides the minimum to meet the project completion date of February 1993.

NON-FEDERAL COST: Local interests must contribute an estimated $25,400,000 to cover one third of the Federal removal cost. They must also make repairs to deteriorated structures in use that could be potential drift source. These repairs must be approved by the Chief of Engineers and are estimated to cost $54,400,000. This work be performed simultaneously with the work to be done by the Federal Government. The material removed in connection with the repairs may be disposed of at cost to the local interests in a facility provided by the Federal Goverment for the Federal work. In addition, local interests are also responsible for enacting and enforcing local legislation during and after completion of the work in political or physical subdivisions of the improvement area to prevent creation of sources of drift and debris such as derelict vessels, deteriorated structures and drift along shores and to supplement existing Federal legislation.

STATUS OF LOCAL COOPERATION: Required assurances from the responsible local agencies are scheduled for execution incrementally as separable portions of the project are initiated in respective political jurisdictions. The New York State Department of Environmental Conservation, the cooperating agency for all work in New York State, has expressed interest in three areas: Brooklyn Reach 2 (Lower East River and Upper Bay), Manhattan (Upper West Side), and Shooters Island. Local cooperation agreements for Manhattan (East River), Staten Island (Stapleton) and Brooklyn one were executed in December 1979, July 1983 and August 1984, respectively. The New Jersey Department of Environmental Protection is the cooperating agency for all work in New Jersey and has proposed three additional areas: Jersey City North, Bayonne, and Arthur Kill. Local cooperation agreements for Elizabeth, Hoboken, Jersey City South and Weehawken to Edgewater were executed in October 1982, June 1984 and August 1984, respectively. The Port Authority has established an Advisory Committee for interested parties and coordination continues with New York City, New Jersey, Bayonne and other localities.

COMPARISON OF FEDERAL COST ESTIMATE: The current Federal cost estimate of $50,800,000 is a decrease of $1,500,000 over the latest estimate ($52,300,000) submitted to Congress (FY 1986). This change includes decreases of $500,000 for favorable bids on Jersey City South Reach, $1,500,000 for adjustments in the estimated inflation allowance through the construction period; deletion of $900,000 for Hempstead Harbor reach offset by increases of $670,000 for inflation to 1 October 1985, and $730,000 for a monitoring program for an EPA Burning Permit.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The Environmental Impact Statement for the overall project and Liberty State Park Area 1 was filed with CEQ on 26 March 1976. Supplements for remaining reaches are not anticipated to be required.

Section 404 of the Clean Water Act
- Fulfillment of Provisions -

| Reach | Public Notice Containing 404 (b)(1)Evaluation | District Engineer's Signature on 404 (b)(1)Evaluation | Water Quality Certification | Tidal Wetlands Permit | Remarks |
|---|---|---|---|---|---|
| Weehawken to Edgewater, NJ | 12 Mar. 84 | 16 Jul. 84 | 20 April 82 | N/A | |
| Brooklyn I | N/A | N/A | N/A | N/A | No placement of fill or discharge of dredged material required. |
| Shooter's Island | Aug. 86 | Jan. 86 | Dec. 86 | Dec. 86 | |
| Bayonne | Aug. 86 | Jan. 86 | Dec. 86 | N/A | |

OTHER INFORMATION: Funds to initiate planning were allocated in FY 1974 and funds to initiate construction were allocated in FY 1975. New Jersey is rehabilitating the waterfront area west of the Statue of Liberty along the Jersey City, New Jersey shoreline at Liberty State Park. A bond issue passed by the New Jersey voters in November 1977, provided $10 million for the State's share of cost for the Harbor Cleanup Program. A second bond issue, passed in November 1979, provided an additional $10 million. The State of New York is budgeting for the project annually, as needed. Presently, the project is proceeding under an interim burn permit from E.P.A. which will expire 1 May 1986. Issuance of new permit is dependent upon the results of the air and water monitoring program currently underway.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: North Atlantic
District: New York

PROJECT: New York Harbor Collection and Removal of Drift, NY & NJ

| Item | Original Baseline | Estimates Presented to Congress ($1,000)<br>Cumulative Changes | Last | Incremental Change | Current |
|---|---|---|---|---|---|
| Federal Cost<br>(Price Level) | 25,800<br>(Jul 73) | | 52,300 3/ | | 50,800 3/ |
| Reason for Change | | (28,500)3/ | | (-1,500) 6/ | |
| a. Price Escalation | | 28,465 | | -830 | |
| b. Design Changes | | | | | |
| c. Additional Functions Added Under General Authorization | | | | | |
| d. Authorized Modification | | | | | |
| e. Post-Contract Award and Other Estimating Adjustments | | -3,065 1/ | | -500 5/ | |
| f. Schedules Changes | | | | | |
| g. Sundry | | 3,100 2/ | | -170 4/ | |
| h. Price Escalation (Real Estate) | | | | | |

1/ -$8,752,000 for favorable bids on various contracts; -$2,354,000 reflecting final contract amounts on Liberty State Park and East River Piers 17 and 18 Contracts. $1,284,000 due to estimating adjustments; $6,757,000 based on GDM's for Liberty State Park, East River, and Manhattan reaches.

2/ Increase due to a reanalysis of remaining requirements, including additional work due to environmental considerations, and cost of GSA Furnished Space.

3/ Includes an allowance for adjustments in estimated inflation through the construction period.

4/ Additional cost for EPA monitoring program for $730,000 and $-900,000 for deletion of Hempstead Harbor reach.

5/ Decrease due to favorable bid on Jersey City South Reach.

6/ Includes -$1,500,000 for adjustments in the estimated inflation allowance through construction period.

REPORTS CONTROL SYMBOL:

| | |
|---|---|
| APPROPRIATION TITLE: CONSTRUCTION GENERAL | CLASSIFICATION: CHANNELS AND HARBORS (NAVIGATION) |

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM | PROJECT COST ESTIMATE | TOTAL TO 30 SEP 19 85 | CURRENT FY 19 86 | BUDGET FY 19 87 | BALANCE TO COMPLETE AFTER FY 19 87 |
|---|---|---|---|---|---|---|
| | (a) | (b) | (c) | (d) | (e) | (f) |
| 1 | CHANNELS AND CANALS | 64,300,000 | 18,497,000 | 2,470,900 | 6,005,000 | 37,327,100 |
| 2 | ENGINEERING AND DESIGN | 5,870,000 | 3,450,000 | 1,260,000 | 430,000 | 730,000 |
| 3 | SUPERVISION AND ADMINISTRATION | 6,030,000 | 1,697,100 | 265,000 | 465,000 | 3,603,000 |
| 4 | TOTAL APPLIED COST (FED & NON-FED) | 76,200,000 | 23,644,100 | 3,995,900 | 6,900,000 | 41,660,000 |
| 5 | UNDISTRIBUTED COSTS (NONE) | | | | | |
| 6 | TOTAL PROJECT COST (FED & NON-FED) | 76,200,000 | 23,644,100 | 3,955,900 | 6,900,000 | 41,660,000 |
| 7 | PENDING ADJUSTMENTS (NONE) | | | | | |
| 8 | TOTAL COST (FED & NON-FED) | 76,200,000 | 23,644,100 | 3,955,900 | 6,900,000 | 41,660,000 |
| 9 | UNDELIVERED ORDERS | | 1,069,300 | -1,069,300 | | |
| 10 | TOTAL OBLIGATIONS | | 24,713,400 | 2,926,600 | 6,900,000 | 41,660,000 |
| 11 | | | | | | |
| 12 | FEDERAL FUNDS | | | | | |
| 13 | TOTAL APPLIED COST | 50,800,000 | 16,219,800 | 3,209,200 | 4,600,000 | 26,771,000 |
| 14 | UNDISTRIBUTED COSTS (NONE) | | | | | |
| 15 | TOTAL PROJECT COST | 50,800,000 | 16,219,800 | 3,209,200 | 4,600,000 | 26,771,000 |
| 16 | PENDING ADJUSTMENTS (NONE) | | | | | |
| 17 | TOTAL COST | 50,800,000 | 16,219,800 | 3,209,200 | 4,600,000 | 26,771,000 |
| 18 | UNDELIVERED ORDERS | | 1,069,300 | -1,069,300 | | |
| 19 | TOTAL OBLIGATIONS | | 24,713,400 | 2,926,600 | 6,900,000 | 26,771,000 |
| 20 | | | | | | |
| 21 | NON FEDERAL FUNDS | | | | | |
| 22 | TOTAL APPLIED COST | 25,400,000 | 7,424,300 | 786,700 | 2,300,000 | 14,889,000 |
| 23 | UNDISTRIBUTED COSTS (NONE) | | | | | |
| 24 | TOTAL PROJECT COST | 25,400,000 | 7,424,300 | 786,700 | 2,300,000 | 14,889,000 |
| 25 | PENDING ADJUSTMEMENTS (NONE) | | | | | |
| 26 | TOTAL COST | 25,400,000 | 7,424,300 | 786,700 | 2,300,000 | 14,889,000 |
| 27 | UNDELIVERED ORDERS | | 273,600 | -273,600 | | |
| 28 | TOTAL OBLIGATIONS | | 7,697,900 | 513,100 | 2,300,000 | 14,889,000 |
| 29 | | | | | | |
| 30 | | | | | | |
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|---|---|---|---|
| EFFECTIVE DATE<br>1 JAN 1986 | DIVISION NORTH ATLANTIC<br>DISTRICT NEW YORK | REGION MIDDLE ATLANTIC<br>BASIN NY METROPOLITAN | PROJECT NEW YORK HARBOR COLLECTION AND REMOVAL OF DRIFT, NY & NJ |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE.

REPORTS CONTROL SYMBOL:

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|---|---|
| APPROPRIATION TITLE: CONSTRUCTION GENERAL | CLASSIFICATION: CHANNELS AND HARBORS (NAVIGATION) |

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM<br>(a) | PROJECT COST ESTIMATE<br>(b) | TOTAL TO 30 SEP 19 85<br>(c) | CURRENT FY 19 86<br>(d) | BUDGET FY 19 87<br>(e) | BALANCE TO COMPLETE AFTER FY 19 87<br>(f) |
|---|---|---|---|---|---|---|
| 1 | METHOD OF FINANCING | | | | | |
| 2 | FEDERAL FUNDS | 50,800,000 | | | 1/ | |
| 3 | ALLOCATIONS | | 17,229,000 | 2,200,000 | | |
| 4 | UNOBLIGATED C/O FROM PRIOR YEARS | | | 213,500 | | |
| 5 | TOTAL FUNDS AVAILABLE FOR OBLIGATION | | | 2,413,500 | | |
| 6 | APPROPRIATION REQUIRED | | | | 6,600,000 | 26,771,000 |
| 7 | | | | | | |
| 8 | NON FEDERAL FUNDS | | | | | |
| 9 | CASH CONTRIBUTIONS | 25,400,000 | 7,426,300 | 786,700 | 2,300,000 | 14,889,000 |
| 10 | OTHER COSTS | | | | | |
| 11 | REPAIR WORK | 54,400,000 | 11,900,000 | 2,000,000 | 2,000,000 | 38,500,000 |
| 12 | TOTAL NON FEDERAL COST | 79,800,000 | 19,326,300 | 2,786,700 | 4,300,000 | 53,389,000 |
| 13 | | | | | | |
| 14 | | | | | | |
| 15 | | | | | | |
| 16 | | | | | | |
| 17 | 1/ REFLECTS $1,500,000 REDUCTION ASSIGNED AS SAVINGS AND SLIPPAGE. | | | | | |
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|---|---|---|---|
| EFFECTIVE DATE<br>1 JAN 1986 | DIVISION NORTH ATLANTIC<br>DISTRICT NEW YORK | REGION MIDDLE ATLANTIC<br>BASIN NY METROPOLITAN | PROJECT NEW YORK HARBOR COLLECTION AND REMOVAL OF DRIFT, NY & NJ |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE.

APPROPRIATION TITLE: Construction, General - Channels and Harbors (Navigation)

PROJECT: Norfolk Harbor and Channels (Deepening) (Continuing Construction)

LOCATION: The project is located in Hampton Roads, VA, a 25-square mile natural harbor serving the ports of Norfolk, Newport News, Portsmouth, Chesapeake, and Hampton, VA.

AUTHORIZATION: FY 1985 Supplemental Appropriations Act (PL 99-88).

BENEFIT TO COST RATIO: The remaining benefit-remaining cost ratio is 5.7 to 1 at 8-1/8 percent. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1985) was 3.7 to 1. The benefit-cost ratio is based on the project functioning independently.

SUMMARIZED FINANCIAL DATA

| | | |
|---|---|---|
| Estimated Appropriation Requirement (C of E) | | $154,460,000 |
| Scheduled Construction | $ 24,760,000 | |
| Unscheduled Construction | 129,700,000 | |
| Estimated Appropriation Requirement (US Coast Guard) | | 270,000 |
| Scheduled Construction | 0 | |
| Unscheduled Construction | 270,000 | |
| Estimated Appropriation Requirement (US Navy) | | 1,990,000 |
| Scheduled Construction | 0 | |
| Unscheduled Construction | 1,990,000 | |
| Estimated Total Appropriation Requirement | | 156,720,000 |
| Scheduled Construction | 24,760,000 | |
| Unscheduled Construction | 131,960,000 | |
| Future Non-Federal Reimbursement | | 28,673,000 |
| Scheduled Construction | 5,050,000 | |
| Unscheduled Construction | 23,623,000 | |

| STATUS: 1 January 1986 | PERCENT COMPLETE | COMPLETION SCHEDULE |
|---|---|---|
| Scheduled work | 0 | September 1988 |

PHYSICAL DATA

| Channels | Depth (Ft. m.l.w.) | Width (feet) | Length (miles) |
|---|---|---|---|
| Atlantic Ocean | 57 | 1,000 | 10.6 |
| Thimble Shoal | 55 | 1,000 | 13.3 |
| Norfolk Harbor | 55 | 800-1,500 | 9.0 |
| Newport News | 55 | 900 | 4.8 |
| Elizabeth River and Southern Branch | 45 | 375-750 | 6.0 |
| Southern Branch | 40 | 250-500 | 2.5 |

Division: North Atlantic District: Norfolk Region: Middle Atlantic
Norfolk Harbor and Channels (Deepening), Virginia

SUMMARIZED FINANCIAL DATA (Continued)

| | | | |
|---|---|---|---|
| Estimated Federal Cost (Ultimate) | | | $128,047,000 |
| Scheduled Construction | | $ 19,710,000 | |
| Unscheduled Construction | | 108,337,000 | |
| Estimated Non-Federal Cost | | | 210,493,000 |
| Scheduled Construction | | 33,930,000 | |
| Cash Contribution | $ 25,740,000 | | |
| Other Costs | 3,140,000 | | |
| Reimbursements | 5,050,000 | | |
| Unscheduled Construction | | 176,563,000 | |
| Cash Contribution | 106,530,000 | | |
| Other Costs | 46,410,000 | | |
| Reimbursement | 23,623,000 | | |
| Total Estimated Scheduled Construction Cost | | | 53,640,000 |
| Total Estimated Unscheduled Construction Cost | | | 284,900,000 |
| Total Estimated Project Cost | | | 338,540,000 |

| | | | Accum. % of Est. Fed. Cost (C of E Cost) |
|---|---|---|---|
| Allocations to 30 September 1985 | $ 15,000 | | |
| Conference Allowance for FY 1986 | 2,800,000 | | |
| Potential Allocation for FY 1986 | 2,785,000 | 1/ | |
| Potential Allocations Through FY 1986 | 2,800,000 | | 2 |
| Allocation Requested for FY 1987 | 10,000,000 | 2/ | 8 |
| Scheduled Balance to Complete after FY 1987 | 11,960,000 | 3/ | |
| Unscheduled Balance to Complete after FY 1987 | 129,700,000 | 3/ | |

1/ Based on the current project schedule.
2/ Obligation and expenditure of budgeted funds for construction of this project are contingent upon enactment of legislation enabling recovery of all or part of the costs to be expended by the project sponsor and the Federal Government in accordance with the agreement between the Administration and the Senate Majority Leadership.
3/ See Other Information.

JUSTIFICATION: The existing channels in the Port of Hampton Roads are not deep enough to accommodate the increasing vessels sizes which transport principal commodities such as coal and grain. Hampton Roads coal terminals already receive colliers in excess of 100,000 deadweight tons which cannot sail fully loaded with the existing 45-foot channels thus making unit transportation costs higher. If the Norfolk Harbor Deepening Project is constructed, larger vessels will be able to load to capacity, providing a savings in the delivery of cargo to final destinations. The project will assist in improving the United States' competitive position as a major coal exporter. Total waterborne transportation savings which would accrue to the project are estimated at $183,800,000 annually at Oct 1985 price levels.

FISCAL YEAR 1987: The requested amount will be used as follows:

| | |
|---|---|
| Initiate Dredging of the Thimble Shoal Channel | $ 9,500,000 |
| Engineering and Design | 300,000 |
| Supervision and Administration | 200,000 |
| Total | $10,000,000 |

NON-FEDERAL COSTS: Consistent with the cost-sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, for the scheduled portion of the project local interests will be required to remove a 30 inch watermain and deepen access channels and berthing areas, where necessary in the construction of the project, presently estimated at $3,140,000; and pay a cash contribution presently estimated at $25,250,000 during construction corresponding to 50 percent of the cost allocated to deep draft navigation; pay disposal costs presently estimated at $490,000; pay an additional 10 percent of the costs allocated to deep draft navigation within a period of 30 years following completion presently estimated at $5,050,000; and pay 50 percent of the costs of incremental maintenance below 45 feet mean low water.

STATUS OF LOCAL COOPERATION: The Norfolk District has met numerous times with the Virginia Port Authority (VPA) and other groups as well as the Secretary of Transportation for the Commonwealth of Virginia during FY 1985 to obtain a Letter of Assurance (LOA) for the Norfolk Harbor Deepening Project. In addition, VPA and the Secretary of Transportation have met with representatives of the Chief of Engineers and the Secretary of the Army to discuss the LOA. Indications are that the Commonwealth of Virginia will provide a LOA in the near future and that they will sign the Local Cooperation Agreement and forward it to the Secretary of the Army for execution sometime in the early spring of 1986.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal (C of E) cost estimate of $154,460,000 is a decrease of $84,660,000 over the latest estimate ($239,120,000) submitted to Congress (FY 1985). This change reflects an increase of $10,480,000 based on higher price levels to 1 October 1985; and $710,000 for an estimated inflation allowance through the construction period; offset by a reduction of $95,850,000 to reflect design changes.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The Final Environmental Impact Statement and Final Supplement were filed with EPA on 3 Apr 1981 and 14 June 1985 respectively. Evaluation of disposal in accordance with Section 404 of the Clean Water Act is not required since the proposed upland site, Craney Island Disposal Area, has already been evaluated in accordance with "404" procedures, and also because the site of the proposed ocean disposal is outside state jurisdiction.

OTHER INFORMATION: Funds to initiate construction were included in the FY 1985 Supplemental Appropriations Act. The first phase of the project will provide an Outbound 50 Foot Channel. The remainder of the project (deepening and widening to authorized dimensions), which is not scheduled at this time, will be scheduled later, in conjunction with local interests.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

| | | | | | |
|---|---|---|---|---|---|
| **Division:** North Atlantic | **Project:** Norfolk Harbor and Channels (Deepening), Virginia | | | | |
| **District:** Norfolk | | | | | |

| | Estimates Presented to Congress ($1,000) | | | | |
|---|---|---|---|---|---|
| Item | Original Baseline | Cumulative Changes | Last | Incremental Change | Current |
| Federal Cost | 239,120 | | 239,120 | | 154,460 1/ |
| (Price Level) | (Oct 83) | | (Oct 83) | | |
| Reason for Change | | 0 | | ((-)84,660) | |
| a. Price Escalation | | 0 | | 11,190 1/ | |
| b. Design Changes | | 0 | | (-)95,850 2/ | |
| c. Additional Function Added Under General Authority | | 0 | | 0 | |
| d. Authorized Modification | | 0 | | 0 | |
| e. Post-Contract Award and Other Estimating Adjustments | | 0 | | 0 | |
| f. Schedule Changes | | 0 | | 0 | |
| g. Sundry | | 0 | | 0 | |
| h. Real Estate | | 0 | | 0 | |

1/ Includes $710 allowance for estimated inflation from 1 October 1985 through the construction period.

2/ Reflects Continuation of Planning and Engineering.

REPORTS CONTROL SYMBOL:

| | |
|---|---|
| APPROPRIATION TITLE: CONSTRUCTION GENERAL | CLASSIFICATION: NAVIGATION, CHANNELS AND HARBORS |

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM | PROJECT COST ESTIMATE | TOTAL TO 30 SEP 19 85 | CURRENT FY 19 86 | BUDGET FY 19 87 | BALANCE TO COMPLETE AFTER FY 19 87 |
|---|---|---|---|---|---|---|
| | (a) | (b) | (c) | (d) | (e) | (f) |
| 1 | FY 1985 Supplemental Appropriation Act | (HD 99/85/1) | | | | |
| 2 | | | | | | |
| 3 | RELOCATIONS | 270,000 | - | - | - | 270,000 |
| 4 | CHANNELS AND CANALS | 272,010,000 | - | - | 19,000,000 | 235,010,000 |
| 5 | ENGINEERING AND DESIGN | 10,680,000 | - | [illegible]00,000 | 600,000 | 7,680,000 |
| 6 | SUPERVISION AND ADMINISTRATION | 9,000,000 | - | 400,000 | 400,000 | 8,200,000 |
| 7 | TOTAL APPLIED COST (FED & NON-FED REQ'D) | 291,960,000 | - | 2,800,000 | 20,000,000 | 269,160,000 |
| 8 | Undistributed Cost (None) | - | - | - | - | - |
| 9 | TOTAL PROJECT COST (FED & NON-FED REQ'D) | 291,960,000 | - | 2,800,000 | 20,000,000 | 269,160,000 |
| 10 | Pending Adjusted (None) | - | - | - | - | - |
| 11 | TOTAL OBLIGATIONS | 291,960,000 | - | 2,800,000 | 20,000,000 | 269,160,000 |
| 12 | | | | | | |
| 13 | FEDERAL FUNDS | | | | | |
| 14 | TOTAL APPLIED COST | 125,787,000 | - | 2,800,000 | 10,000,000 | 112,987,000 |
| 15 | Undistributed Cost (None) | - | - | - | - | - |
| 16 | TOTAL PROJECT COST | 125,787,000 | - | 2,800,000 | 10,000,000 | 112,987,000 |
| 17 | Pending Adjustments (None) | - | - | - | - | - |
| 18 | TOTAL COST | 125,787,000 | - | 2,800,000 | 10,000,000 | 112,987,000 |
| 19 | Undelivered Orders (None) | - | - | - | - | - |
| 20 | TOTAL OBLIGATIONS | 125,787,000 | - | 2,800,000 | 10,000,000 | 112,987,000 |
| 21 | | | | | | |
| 22 | NON-FEDERAL FUNDS (REQUIRED ONLY 1/) | | | | | |
| 23 | TOTAL APPLIED COST | 166,173,000 | - | - | 10,000,000 | 156,173,000 |
| 24 | Undistributed Cost (None) | - | - | - | - | - |
| 25 | TOTAL PROJECT COST | 166,173,000 | - | - | 10,000,000 | 156,173,000 |
| 26 | Pending Adjustment | - | - | - | - | - |
| 27 | TOTAL COST | 166,173,000 | - | - | 10,000,000 | 156,173,000 |
| 28 | Undelivered Orders (None) | - | - | - | - | - |
| 29 | TOTAL OBLIGATIONS | 166,173,000 | - | - | 10,000,000 | 156,173,000 |
| 30 | | | | | | |
| 31 | | | | | | |
| 32 | | | | | | |
| 33 | | | | | | |

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|---|---|---|---|
| EFFECTIVE DATE 1 Jan 86 | DIVISION NORTH ATLANTIC<br>DISTRICT NORFOLK | REGION MIDDLE ATLANTIC<br>BASIN CHESAPEAKE BAY | PROJECT NORFOLK HARBOR AND CHANNELS (DEEPENING), VIRGINIA |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE.

REPORTS CONTROL SYMBOL:

| | |
|---|---|
| APPROPRIATION TITLE: CONSTRUCTION GENERAL | CLASSIFICATION:<br>NAVIGATION, CHANNELS AND HARBORS |

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM (a) | PROJECT COST ESTIMATE (b) | TOTAL TO 30 SEP 19 85 (c) | CURRENT FY 19 86 (d) | BUDGET FY 19 87 (e) | BALANCE TO COMPLETE AFTER FY 19 87 (f) |
|---|---|---|---|---|---|---|
| 1 | METHOD OF FINANCING | | | | | |
| 2 | FEDERAL FUNDS | 125,787,000 | | | | |
| 3 | ALLOCATIONS | | 15,000 | 2,785,000 | | |
| 4 | UNOBLIGATED CARRYOVER FROM PRIOR YEARS | | | 15,000 | | |
| 5 | TOTAL FUNDS AVAILABLE FOR OBLIGATION | | | 2,800,000 | | |
| 6 | APPROPRIATION REQUIRED | | | | 10,000,000 | 112,987,000 |
| 7 | | | | | | |
| 8 | NON-FEDERAL FUNDS (REQUIRED ONLY 1/) | 166,173,000 | | | | |
| 9 | CONTRIBUTIONS | | - | - | | |
| 10 | UNOBLIGATED CARRYOVER FROM PRIOR YEARS | | | - | | |
| 11 | TOTAL FUNDS AVAILABLE FOR OBLIGATION | | | - | | |
| 12 | CONTRIBUTION REQUIRED | | | | 10,000,000 | 156,173,000 |
| 13 | | | | | | |
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| 29 | | | | | | |
| 30 | | | | | | |
| 31 | 1/ Excludes $44,320,000 NON-FEDERAL FUNDS (OTHER) | | | | | |
| 32 | | | | | | |
| 33 | | | | | | |

| | | | |
|---|---|---|---|
| EFFECTIVE DATE<br>1 Jan 86 | DIVISION NORTH ATLANTIC<br>DISTRICT NORFOLK | REGION MIDDLE ATLANTIC<br>BASIN CHESAPEAKE BAY | PROJECT NORFOLK HARBOR AND CHANNELS (DEEPENING), VIRGINIA |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE.

APPROPRIATION TITLE: Construction, General - Beach Erosion Control

PROJECT: Virginia Beach, Virginia (Reimbursement)

LOCATION: The city of Virginia Beach is located on the Atlantic Ocean south from Cape Henry and east of the city of Norfolk, Virginia.

AUTHORIZATION: River and Harbor Act of 1962.

BENEFIT TO COST RATIO: The remaining benefit-remaining cost ratio is not applicable because the initial construction and initial beach nourishment have been completed. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1965) was 4.7 to 1. The benefit to cost ratio is based on the project functioning independently.

| SUMMARIZED FINANCIAL DATA | | ACCUM. % OF EST. FED. COST |
|---|---|---|
| Estimated Federal Cost | $ 5,500,000 | |
| Estimated Non-Federal Cost | 5,500,000 | |
| Total Estimated Project Cost | $11,000,000 | |
| Allocation to 30 September 1985 | $3,940,200 | |
| Conference Allowance for FY 1986 | 480,000 | |
| Allocations for FY 1986 | 480,000 | |
| Allocations to Date | 4,420,200 | 80 |
| Allocation Requested for FY 1987 | 530,000 | 89 |
| Scheduled Balance to Complete after FY 1987 | 549,800 | |
| Unscheduled Balance to Complete after FY 1987 | 0 | |

| STATUS: 1 January 1986 | PERCENT COMPLETE | COMPLETION SCHEDULE |
|---|---|---|
| Entire Project | 80 | Feb 87 |

PHYSICAL DATA

Periodic nourishment of the beach between Rudee Inlet and 49th Street, a distance of about 3-1/3 miles, to maintain the berm to a minimum width of approximately 100 feet at elevation 7 feet above mean low water for a period of 25 years.

JUSTIFICATION: The periodic nourishment program is a modification of the original project adopted by the 1954 River and Harbor Act, which provided for beach restoration and the deferred construction of a system of groins. Comparative cost studies of groin construction versus periodic nourishment indicate that the latter is the more suitable and economical method for maintaining shore stability, protecting property, and insuring maximum recreation benefits from use of the publicly-owned shores.

Division: North Atlantic

District: Norfolk

Region: Middle Atlantic
Virginia Beach, Virginia

**JUSTIFICATION** (Cont'd)

The beach was restored in 1953 and has been maintained since then by local interests, with Federal participation beginning in 1962. Its effectiveness in providing protection from hurricanes and northeast storms was demonstrated in the severe coastal storm of March 1962, when considerable property damages and business losses were averted.

Commercial development along the beachfront has enjoyed an unprecedented boom during the past decade due in part to the protection provided by the beach restoration and nourishment program. Current evaluation of oceanfront properties substantially exceeds that prevailing prior to project implementation. The average annual benefits are as follows:

| Benefits | Amount<br>(1 October 1985) |
|---|---|
| Beach Erosion Control . . . | $ 979,000 |
| Recreation . . . . . . . . | 160,000 |
| Total | $1,139,000 |

**FISCAL YEAR 1987:** The requested amount of $530,000 will be used to reimburse local interests for the Federal share of the cost of the periodic nourishment program through September 1986.

**COMPLETED MODIFICATIONS:** Beach restoration authorized by the 1954 River and Harbor Act has been completed. The total cost of this work was $705,300 of which the Federal share was $229,600.

**NON-FEDERAL COSTS:** Local interests are required to furnish all necessary lands, easements, and rights-of-way; maintain the protective and improvement measures during their useful life, as may be required to serve their intended purpose; not permit water pollution that would endanger the health of bathers, and maintain continued public ownership of the shore upon which the amount of Federal participation is based, and its administration for public use only; and contribute 50 percent of the 25-year program of periodic nourishment cost at an estimated cost of $5,500,000.

In addition, local interests have incurred costs of $457,700 on completed beach restoration work.

**STATUS OF LOCAL COOPERATION:** Local interests have complied with the requirements of cooperation, and are engaged in the work of periodic nourishment. A formal agreement with the city of Virginia Beach and the Virginia Beach Erosion Commission was entered into 1 November 1963. The local sponsor is the city of Virginia Beach.

**COMPARISON OF FEDERAL COST ESTIMATES:** The current Federal cost estimate of $5,500,000 is the same as the last estimate ($5,500,000) presented to Congress (FY 1986).

**STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT:** The final environmental impact statement was published in the 1 August 1975 issue of the Federal Register. A Supplemental Information Report appeared in the 25 February 1980 issue of the Federal Register.

The provisions of Section 404 of the Clean Water Act have been met by a Section 404(b)(1) Evaluation (December 1979), a Public Notice issued (December 1979), a Certification from the State of Virginia (January 1980), and the District Engineer's signature on the Section 404 Evaluation Report (January 1980).

**OTHER INFORMATION:** Funds to initiate reimbursement of local interests were appropriated in FY 1965. Suitable local sand and borrow areas were exhausted during 1975. Sand for beach nourishment derived from the maintenance dredging of Thimble Shoal Channel, stockpiled at Cape Henry and transported to Virginia Beach has also been depleted. Local interests have acquired 72 acres of upland property which should furnish adequate supplies of suitable material to satisfy project beach nourishment needs.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: North Atlantic
District: Norfolk

Project: Virginia Beach, Virginia (Reimbursement)

| | Estimates Presented to Congress ($1,000) | | | | |
|---|---|---|---|---|---|
| Item | Original Baseline | Cumulative Changes | Last | Incremental Change | Current |
| Federal Cost<br>(Price Level) | 740<br>(Jul 1962) | | 5,500 | | 5,500 2/ |
| Reason for Change | | (4,760) 2/ | | 0 | |
| a. Price Escalation (Construction Features) | | 2,290 | | 0 | |
| b. Design Changes | | 0 | | 0 | |
| c. Additional Functions Added Under General Authority | | 0 | | 0 | |
| d. Authorized Modification | | 0 | | 0 | |
| e. Post-Contract Award and Other Estimating Adjustments | | 2,470 1/ | | 0 | |
| f. Schedule Changes | | 0 | | 0 | |
| g. Sundry | | 0 | | 0 | |
| h. Price Escalation (Real Estate) | | 0 | | 0 | |

1/ Estimate increased $475,000 in 1967 to provide additional quantity of beach material based on actual experience; $280,000 in 1973 because of storm damage; and $1,965,000 in 1975 to reflect added cost of securing nourishment sand from remote areas. Decreased $250,000 to reflect a reduction in unused project contingencies which will not be needed during the remaining life of the project.

2/ Includes an allowance for estimated inflation through the construction period.

REPORTS CONTROL SYMBOL:

| | |
|---|---|
| APPROPRIATION TITLE: CONSTRUCTION GENERAL | CLASSIFICATION:<br>BEACH EROSION CONTROL (REIMBURSEMENT) |

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM (a) | PROJECT COST ESTIMATE (b) | TOTAL TO 30 SEP 19 85 (c) | CURRENT FY 1986 (d) | BUDGET FY 1987 (e) | BALANCE TO COMPLETE AFTER FY 19 87 (f) |
|---|---|---|---|---|---|---|
| 1 | 1962 R&A (HD 382/87/2) | | | | | |
| 2 | BEACH REPLENISHMENT | $11,000,000 | $8,840,400 | $1,060,000 | $1,099,600 | 0 |
| 3 | TOTAL PROJECT COST | 11,000,000 | 8,840,400 | 1,060,000 | 1,099,600 | 0 |
| 4 | Federal Share | 5,500,000 | 3,876,000 | 544,200 | 530,000 | 549,800 |
| 5 | Non-Federal Share | 5,500,000 | 4,964,400 | 515,800 | 569,600 | (-)549,800 |
| 6 | TOTAL FEDERAL SHARE | 5,500,000 | 3,876,000 | 544,200 | 530,000 | 549,800 |
| 7 | Undelivered Orders | - | - | - | - | |
| 8 | TOTAL FEDERAL OBLIGATIONS | | 3,876,000 | 544,200 | 530,000 | 549,800 |
| 9 | METHOD OF FINANCING FEDERAL FUNDS | | | | | |
| 10 | Allocations | | [illegible],940,200 | 480,000 | - | |
| 11 | Unobligated Carryover for Prior Year | | | 64,200 | - | |
| 12 | Total Funds Available for Obligation | | | 544,200 | - | |
| 13 | Appropriation Required | | | | 530,000 | 549,800 |
| 14 | | | | | | |
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|---|---|---|---|
| EFFECTIVE DATE<br>1 JAN 86 | DIVISION NORTH ATLANTIC<br>DISTRICT NORFOLK | REGION MIDDLE ATLANTIC<br>BASIN ATLANTIC COAST OF VA | PROJECT<br>VIRGINIA BEACH, VIRGINIA (1962 MOD) |

ENG FORM 1 SEP 78 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE.

APPROPRIATION TITLE: Construction General - Shore Protection

PROJECT: Liberty State Park Levee and Seawall, New Jersey (Continuing)

LOCATION: The project is located in Jersey City, Hudson County, New Jersey directly opposite the Statue of Liberty and Ellis Island in Upper New York Bay.

AUTHORIZATION: Section 152 of the Water Resources Development Act of 1976.

BENEFIT TO COST RATIO: The benefit - cost ratio is not applicable because monetary benefits have not been quantified.

| SUMMARIZED FINANCIAL DATA | | | Accum % of Est Fed Cost |
|---|---|---|---|
| Estimated Federal Cost | | $19,000,000 | |
| Estimated Non-Federal Cost | | 19,000,000 | |
| Cash Contribution | 14,000,000 | | |
| Other Costs | 5,000,000 | | |
| Total Estimated Project Cost | | $38,000,000 | |
| Allocation to 30 September 1985 | | 222,000 | |
| Conference Allowance for FY 1986 | | 0 | |
| Potential Allocation for FY 1986 | | 90,000 1/ | |
| Potential Allocations through FY 1986 | | 312,000 | 1 |
| Allocation Requested for FY 1987 | | 5,000,000 | 27 |
| Scheduled Balance to Complete after FY 1987 | | 13,688,000 | |
| Unscheduled Balance to Complete after FY 1987 | | 0 | |

| STATUS (1 January 1986) | Permit Completed | Completion Schedule |
|---|---|---|
| Relocations | 0 | Jan. 1987 |
| Levees & Seawall | 0 | Oct. 1990 |
| North & South Walkways | 0 | Oct. 1990 |
| Entire Project | 0 | Oct. 1990 |

PHYSICAL DATA

Walkways

| | | |
|---|---|---|
| North Walkway | 870 | Feet |
| South Walkway | 1,635 | Feet |

Levees & Seawall

| | |
|---|---|
| Levees | 4,400 |

1/ Based on current project schedule.

Division: North Atlantic District: New York Region: Middle Atlantic

Liberty State Park Levee & Seawall, NJ

JUSTIFICATION: The State of New Jersey's plan for Liberty State Park will transform a decaying open space into a new and useful waterfront area. Opposite two national monuments, the park will offer public access to the waterfront and new recreational activities at the center of the New Jersey-New York Metropolitan region. The existing site was largely abandoned, covered with weeds, littered with debris, and bordered with derelict piers. The new site will include a new waterfront, inland waterways, and green landscapes. The aesthetically pleasing park will stimulate development of the surrounding community, resulting in real estate enhancement for a wide region. Adjacent to the New Jersey Turnpike and in close proximity to rail service, Liberty State Park will be easily available to 16 million people.

FISCAL YEAR 1987: The requested amount will be applied as follows:

| | |
|---|---:|
| Initate Construction of Levees & Seawalls | $4,185,000 |
| Initate Relocations | 335,000 |
| Engineering & Design | 202,000 |
| Supervision & Administration | 278,000 |
| Total | $5,000,000 |

NON-FEDERAL COSTS: Consistent with the cost-sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, local interests will be required to provide lands, easements, rights-of-way, and required disposal areas, modify or relocate utilities, road, and other facilities, where necessary in the construction of the project, presently estimated at $5,000,000; and to make a cash contribution presently estimated to be $14,000,000. The annual operation and maintenance cost is estimated to be $55,000. Local interests have agreed to make all required payments and voluntary contributions concurrently with project construction.

STATUS OF LOCAL COOPERATION: The New Jersey Department of Environmental Protection, the local sponsor, has indicated its willingness to comply with the items of local cooperation in a letter dated 28 October 1985. In relation to the provision for cost sharing, they have indicated that they would negotiate this item subsequent to the passage of appropriate legislation.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $19,000,000 is an increase of $1,400,000 from the latest estimate of ($18,600,000) submitted to Congress (FY 1985). This change includes increases of $300,000 for higher price level to 1 October 1985 and $1,100,000 for estimated inflation allowance from 1 October 1985 through the construction period.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The final EIS was filed with CEQ on 26 March 1976.

The provision of Section 404 of the Clean Water Act have been met by a Section 404(b)(1) Evaluation (3 January 1980), and the District Engineer's signature on the Section 404(b)(1) Evaluation Report (3 January 1980).

OTHER INFORMATION: Funds to initiate planning were appropriated in FY 1977. Preconstruction planning was completed in October 1985. This project was included among those to be started under the FY 1985 Supplemental Appropriation Act. In order to prepare the site to allow the Corps to initiate construction and to advance the eventual completion date of this project, the State of New Jersey has dredged the southern peninsula area and constructed a portion of the upland diked disposal area. This work was undertaken at State cost and was completed in April 1981.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: North Atlantic
District: New York

Project: Liberty State Park, Levec and Seawall New Jersey

| | Estimates Presented to Congress ($1,000) | | | | |
|---|---|---|---|---|---|
| Item | Original Baseline | Cumlative Changes | Last | Incremental Change | Current |
| Federal Cost | 18,600 | | 18,600 | | 19,000 1/ |
| (Price Level) | (Oct 83) | | (Oct 83) | | |
| Reason for Change | | | | (1,400) 1/ | |
| a. Price Escalation (Construction Features) | | 0 | | 1,400 | |
| b. Design Changes | | 0 | | | |
| c. Additional Functions Added Under General Authority | | 0 | | 0 | |
| d. Authorized Modifications | | 0 | | 0 | |
| e. Post-Contract Award and Other Estimating Adjustments | | 0 | | 0 | |
| f. Schedule Changes | | 0 | | 0 | |
| g. Sundry | | 0 | | 0 | |
| h. Price Escalation (Real Estate) | | 0 | | 0 | |

1/ Includes $1,100,000 allowance for estimated inflation from 1 October 1985 through the construction period.

REPORTS CONTROL SYMBOL:

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: SHORE PROTECTION

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM | PROJECT COST ESTIMATE | TOTAL TO 30 SEP 19 85 | CURRENT FY 1986 | BUDGET FY 1987 | BALANCE TO COMPLETE AFTER FY 19 87 |
|---|---|---|---|---|---|---|
| | (a) | (b) | (c) | (d) | (e) | (f) |
| 1 | RELOCATION | 670,000 | | | 670,000 | |
| 2 | ROADS AND BRIDGES | 8,790,000 | | | | 8,790,000 |
| 3 | BREAKWATERS AND SEAWALLS | 20,800,000 | | | 8,370,000 | 12,430,000 |
| 4 | ENGINEERING AND DESIGN | 740,000 | 150,000 | 160,000 | 405,000 | 25,000 |
| 5 | SUPERVISION AND ADMINISTRATION | 2,000,000 | 52,000 | 60,000 | 555,000 | 1,333,000 |
| 6 | TOTAL APPLIED COST (FED & NON-FED) | 33,000,000 | 202,000 | 220,000 | 10,000,000 | 22,578,000 |
| 7 | UNDISTRUTED COST (NONE) | | | | | |
| 8 | TOTAL PROJECT COST (FED & NON-FED) | 33,000,000 | 202,000 | 220,000 | 10,000,000 | 22,578,000 |
| 9 | PENDING ADJUSTMENTS (NONE) | | | | | |
| 10 | TOTAL COST (FED & NON-FED) | 33,000,000 | 202,000 | 220,000 | 10,000,000 | 22,578,000 |
| 11 | UNDELIVERED ORDERS | | 20,000 | -20,000 | | |
| 12 | TOTAL OBLIGATIONS | | 222,000 | 200,000 | 10,000,000 | 22,578,000 |
| 13 | | | | | | |
| 14 | FEDERAL FUNDS | | | | | |
| 15 | TOTAL APPLIED COST | 19,000,000 | 202,000 | 110,000 | 5,000,000 | 13,688,000 |
| 16 | UNDISTRIBUTED COSTS (NONE) | | | | | |
| 17 | TOTAL PROJECT COST | 19,000,000 | 202,000 | 110,000 | 5,000,000 | 13,688,000 |
| 18 | PENDING ADJUSTMENTS (NONE) | | | | | |
| 19 | TOTAL COST | 19,000,000 | 202,000 | 110,000 | 5,000,000 | 13,688,000 |
| 20 | UNDELIVERED ORDERS | | 20,000 | -20,000 | | |
| 21 | TOTAL OBLIGATION | | 222,000 | 90,000 | 5,000,000 | 13,688,000 |
| 22 | | | | | | |
| 23 | NON-FEDERAL FUNDS | | | | | |
| 24 | TOTAL APPLIED COST | 14,000,000 | | 110,000 | 5,000,000 | 8,890,000 |
| 25 | UNDISTRIBUTED COSTS (NONE) | | | | | |
| 26 | TOTAL PROJECT COST | 14,000,000 | | 110,000 | 5,000,000 | 8,890,000 |
| 27 | PENDING ADJUSTMENTS (NONE) | | | | | |
| 28 | TOTAL COST | 14,000,000 | | 110,000 | 5,000,000 | 8,890,000 |
| 29 | UNDELIVERED ORDERS (NONE) | | | | | |
| 30 | TOTAL OBLIGATIONS | | | 110,000 | 5,000,000 | 8,890,000 |
| 31 | | | | | | |
| 32 | | | | | | |
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|---|---|---|---|
| EFFECTIVE DATE<br>1 JAN 1986 | DIVISION NORTH ATLANTIC<br>DISTRICT NEW YORK | REGION MIDDLE ATLANTIC<br>BASIN NY METROPOLITAN | PROJECT LIBERTY STATE PARK<br>LEVEE AND SEAWALLS, NJ |

ENG FORM 1 SEP 76 2200 (ER 11–2–240) EDITION OF 1 NOV 74 IS OBSOLETE.

REPORTS CONTROL SYMBOL:

| | |
|---|---|
| APPROPRIATION TITLE: CONSTRUCTION GENERAL | CLASSIFICATION: SHORE PROTECTION |

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM (a) | PROJECT COST ESTIMATE (b) | TOTAL TO 30 SEP 19 85 (c) | CURRENT FY 19 86 (d) | BUDGET FY 19 87 (e) | BALANCE TO COMPLETE AFTER FY 19 87 (f) |
|---|---|---|---|---|---|---|
| 1 | METHOD OF FINANCING | | | | | |
| 2 | FEDERAL FUNDS | 19,000,000 | | | | |
| 3 | ALLOCATIONS | | 222,000 | 90,000 | | |
| 4 | UNOBLIGATED c/o FROM PRIOR YEARS | | -20,000 | 20,000 | | |
| 5 | TOTAL FUNDS AVAILABLE FOR OBLIGATION | | | 110,000 | | |
| 6 | APPROPRIATION REQUIRED | | | | 5,000,000 | 13,688,000 |
| 7 | | | | | | |
| 8 | NON FEDERAL FUNDS | | | | | |
| 9 | CASH CONTRIBUTIONS | 14,000,000 | | 110,000 | 5,000,000 | 8,890,000 |
| 10 | OTHER COSTS | | | | | |
| 11 | INTERIOR DRAINAGE | 5,000,000 | | 100,000 | 500,000 | 4,400,000 |
| 12 | TOTAL NON-FEDERAL COST | 19,000,000 | | 210,000 | 5,500,000 | 13,290,000 |
| 13 | | | | | | |
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| | | | |
|---|---|---|---|
| EFFECTIVE DATE<br>1 JAN 1986 | DIVISION NORTH ATLANTIC<br>DISTRICT NEW YORK | REGION MIDDLE ATLANTIC<br>BASIN NY METROPOLITAN | PROJECT LIBERTY STATE PARK LEVEE AND SEAWALLS, NJ |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE.

APPROPRIATION TITLE: Construction General - Local Protection (Flood Control)

PROJECT: Ardsley, New York (Continuing)

LOCATION: The project is located on the Saw Mill River approximately 5 miles upstream from the junction of the Saw Mill and Hudson Rivers. It is in the Village of Ardsley, Westchester County, New York.

AUTHORIZATION: Authorized in 1976 under the provisions of Section 201 of the Flood Control Act of 1965.

BENEFIT TO COST RATIO: The remaining benefit-remaining cost ratio is 1.09 to 1 at 8-1/8 percent. The benefit - cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1985) was 1.2 to 1. The benefit - cost ratio is based on the project functioning independently.

| SUMMARIZED FINANCIAL DATA | | | Accum. % of Est Fed Cost |
|---|---|---|---|
| Estimated Federal Cost | | $4,430,000 | |
| Estimated Non-Federal Cost | | 1,470,000 | |
| Cash Contribution | 610,000 | | |
| Other Costs | 860,000 | | |
| Total Estimated Project Cost | | $5,900,000 | |
| Allocation to 30 September 1985 | | 470,000 | |
| Conference Allowance for FY 1986 | | 0 | |
| Potential Allocation for FY 1986 | | 75,000 1/ | |
| Potential Allocations through FY 1986 | | 545,000 | 12 |
| Allocation Requested for FY 1987 | | 2,000,000 | 57 |
| Scheduled Balance to Complete after FY 1987 | | 1,885,000 | |
| Unscheduled Balance to Complete after FY 1987 | | 0 | |

| Status (1 January 1986) | Percent Completed | Completion Schedule |
|---|---|---|
| Channels & Canal | 0 | Sep 1988 |
| Levees & Floodwalls | 0 | Sep 1988 |
| Buildings Grounds & Utilities | 0 | Sep 1988 |
| Entire Project | 0 | Sep 1988 |

PHYSICAL DATA

| | | |
|---|---|---|
| Channels and Canals | 1140 | Feet |
| Levees | 426 | Feet |
| Flood Wall | 1003 | Feet |
| Concrete Flume | 342 | Feet |

1/ Based on current project schedule.

Division: North Atlantic

District: New York

Region: Middle Atlantic
Ardsley, New York

JUSTIFICATION: The Village of Ardsley, NY has suffered severe damage to its commercial and industrial area by flooding of the Saw Mill River. The most damaging flood of record resulted from the storm of April 1984 which caused damages estimated at $1,596,000 (October 1985 prices) and disrupted commercial and industrial activities in the Village. Thirteen retail and commercial establishments as well as two industrial plants were affected by flooding. Flooding which occurred in September 1975 inflicted $1,260,000 in property damage (October 1985 price level). These floods are estimated to have a recurrence interval of 33 years and 25 years respectively. The project, designed for a flood of 1,850 cubic feet per second, would provide protection against a recurrence of the April 1984 or September 1975 floods. The average annual benefits, all attributable to flood control, are $560,900 based on 1 October 1985 prices.

FISCAL YEAR 1987: The requested amount will be applied as follows:

| | |
|---|---|
| Start Construction of | |
| Channels & Canals | 360,000 |
| Levees & Floodwalls | 1,504,000 |
| Buildings, Grounds & Utilities | 16,000 |
| Engineering & Design | 24,000 |
| Supervision & Administration | 96,000 |
| TOTAL | $2,000,000 |

NON-FEDERAL COSTS: Consistent with the cost-sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, local interests will be required to provide lands, easements, rights-of-way, and required disposal areas presently estimated at $760,000; modify or relocate buildings, utilities, where necessary in the construction of the project presently estimated at $100,000; plus a cash contribution, presently estimated at $610,000, sufficient to bring the local cost share to 25 percent of the costs allocated to flood control, and bear all costs of operations, maintenance and replacement of flood control facilities presently estimated at $77,000 annually. Local interests have agreed to make all required payments and voluntary contributions concurrently with project construction.

STATUS OF LOCAL COOPERATION: The New York State Department of Environmental Conservation, the local sponsor, in an 11 December 1973 letter, indicated its intent to comply with the items of local cooperation and reaffirmed this on 15 August 1979 and 23 August 1985. The State of New York, in an 18 October 1985 letter, expressed its willingness to assume responsiblity as local sponsor in accordance with the cost sharing and financing concepts agreed to by the Administration and Senate Majority Leadership.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $4,430,000 is an increase of $670,000 over the latest estimate ($3,760,000) presented to Congress (FY 1985). There were increases of $485,000 due to price level updating to 1 October 1985; $179,000 for estimated inflation from 1 October 1985 through the construction period, and $15,000 for E & D and S & A for the reevaluation of the project due to a recent fire to the Selecto Warehouse in the downstream section of the project, partially offset by a decrease of 9,000 to reflect design changes.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The final EIS was filed with CEQ on 18 June 1976.

The provisions of Section 404 of the Clean Water Act have been met by a Section 404(b)(1) Evaluation (17 April 1979), a Public Notice issued (20 July 1979), and the District Engineer's signature on the Section 404(b)(1) Evaluation Report, (28 March 1980). By letter dated 6 August 1979 the New York State Department of Environmental Conservation waived the Water Certification requirements.

OTHER INFORMATION: Funds to initiate planning were appropriated in FY 1979. Preconstruction planning was completed October 1984. This project was among those included in the FY 1985 Supplemental Appropriations Act.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: North Atlantic
District New York

Project: ARDSLEY, NEW YORK

| Item | Estimates Presented to Congress ($1,000)<br>Original Baseline | Cumulative Changes | Last | Incremental Change | Current |
|---|---|---|---|---|---|
| Federal Cost (Price Level) | 3,760 (Oct'83) | | 3,760 (Oct'83) | | 4,430 1/ |
| Reason for Change | | 0 | | (670) 1/ | |
| a. Price Escalation (Construction Features) | | 0 | | 664 | |
| b. Design Changes | | | | -9 2/ | |
| c. Additional Functions Added Under General Authority | | 0 | | 0 | |
| d. Authorized Modifications | | 0 | | 0 | |
| e. Post-Contract Award and Other Estimating Adjustments | | | | 15 3/ | |
| f. Schedule Changes | | 0 | | 0 | |
| g. Sundry | | | | | |
| h. Price Escalation (Real Estate) | | 0 | | 0 | |

1/ Includes $179,000 allowance for estimated inflation through the construction period.
2/ Reflects design changes.
3/ Includes $10,000 for Engineering & Design and $5,000 for Supervision & Administration based on reevaluation of planning requirements due to a recent fire.

REPORTS CONTROL SYMBOL:

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: LOCAL PROTECTION PROJECT (FLOOD CONTROL)

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM (a) | PROJECT COST ESTIMATE (b) | TOTAL TO 30 SEP 19 85 (c) | CURRENT FY 19 86 (d) | BUDGET FY 19 87 (e) | BALANCE TO COMPLETE AFTER FY 19 87 (f) |
|---|---|---|---|---|---|---|
| 1 | CHANNELS AND CANALS | 930,000 | | | 450,000 | 480,000 |
| 2 | LEVEES AND FLOODWALLS | 3,250,000 | | | 1,880,000 | 1,370,000 |
| 3 | BUILDINGS, GROUNDS & UTILITIES | 50,000 | | | 20,000 | 30,000 |
| 4 | ENGINEERING & DESIGN | 498,000 | 375,000 | 75,000 | 30,000 | 18,000 |
| 5 | SUPERVISION & ADMINISTRATION | 312,000 | 80,000 | 15,000 | 120,000 | 97,000 |
| 6 | TOTAL APPLIED COST (FED & NON-FED) | 5,040,000 | 455,000 | 90,000 | 2,500,000 | 1,995,000 |
| 7 | UNDISTRIBUTED COSTS (NONE) | | | | | |
| 8 | TOTAL PROJECT COST | 5,040,000 | 455,000 | 90,000 | 2,500,000 | 1,995,000 |
| 9 | FUNDING ADJUSTMENT (NONE) | | | | | |
| 10 | TOTAL COST (FED & NON-FED CONTRIBS) | 5,040,000 | 455,000 | 90,000 | 2,500,000 | 1,995,000 |
| 11 | UNDELIVERED ORDERS | | | | | |
| 12 | TOTAL OBLIGATIONS | | 455,000 | 90,000 | 2,500,000 | 1,995,000 |
| 13 | | | | | | |
| 14 | FEDERAL FUNDS | | | | | |
| 15 | TOTAL APPLIED COST | 4,430,000 | 455,000 | 90,000 | 2,000,000 | 1,885,000 |
| 16 | UNDISTRIBUTED COST (NONE) | | | | | |
| 17 | TOTAL PROJECT COST | 4,430,000 | 455,000 | 90,000 | 2,000,000 | 1,885,000 |
| 18 | PENDING ADJUSTMENTS | | | | | |
| 19 | TOTAL COST | 4,430,000 | 455,000 | 90,000 | 2,000,000 | 1,885,000 |
| 20 | UNDELIVERED ORDERS (NONE) | | | | | |
| 21 | TOTAL OBLIGATION | | 455,000 | 90,000 | 2,000,000 | 1,885,000 |
| 22 | | | | | | |
| 23 | NON-FEDERAL FUNDS | | | | | |
| 24 | TOTAL APPLIED COST | 610,000 | | | 500,000 | 110,000 |
| 25 | UNDISTRIBUTED COST (NONE) | | | | | |
| 26 | TOTAL PROJECT COST | 610,000 | | | 500,000 | 110,000 |
| 27 | PENDING ADJUSTMENTS | | | | | |
| 28 | TOTAL COST | 610,000 | | | 500,000 | 110,000 |
| 29 | UNDELIVERED ORDERS | | | | | |
| 30 | TOTAL OBLIGATIONS | | | | 500,000 | 110,000 |
| 31 | | | | | | |
| 32 | | | | | | |
| 33 | | | | | | |

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|---|---|---|---|
| EFFECTIVE DATE<br>1 JAN 1986 | DIVISION NORTH ATLANTIC<br>DISTRICT NEW YORK | REGION MIDDLE ATLANTIC<br>BASIN NY METROPOLITAN | PROJECT<br>ARDSLEY, NY |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE.

REPORTS CONTROL SYMBOL:

| | |
|---|---|
| APPROPRIATION TITLE: CONSTRUCTION GENERAL | CLASSIFICATION: LOCAL PROTECTION PROJECT (FLOOD CONTROL) |

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 1986 AND 1987

| LINE NO | ITEM (a) | PROJECT COST ESTIMATE (b) | TOTAL TO 30 SEP 1985 (c) | CURRENT FY 1986 (d) | BUDGET FY 1987 (e) | BALANCE TO COMPLETE AFTER FY 1987 (f) |
|---|---|---|---|---|---|---|
| 1 | METHOD OF FINANCING | | | | | |
| 2 | FEDERAL FUNDS | 4,430,000 | | | | |
| 3 | ALLOCATIONS | | 470,000 | 75,000 | | |
| 4 | UNOBLIGATED c/o FROM PRIOR YEAR | | -15,000 | 15,000 | | |
| 5 | TOTAL FUNDS AVAILABLE FOR OBLIGATION | | | 90,000 | | |
| 6 | APPROPRIATION REQUIRED | | | | 2,000,000 | 1,885,000 |
| 7 | | | | | | |
| 8 | NON-FEDERAL FUNDS | | | | | |
| 9 | CASH CONTRIBUTIONS | 610,000 | | | 500,000 | 110,000 |
| 10 | OTHER COSTS | | | | | |
| 11 | LANDS AND DAMAGES | 760,000 | | 300,000 | 460,000 | |
| 12 | RELOCATIONS | 85,000 | | 20,000 | 50,000 | 15,000 |
| 13 | BUILDINGS, GROUNDS AND UTILITIES | 15,000 | | | 10,000 | 5,000 |
| 14 | TOTAL NON-FEDERAL COST | 1,470,000 | | 320,000 | 1,020,000 | 130,000 |
| 15 | | | | | | |
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| | | | |
|---|---|---|---|
| EFFECTIVE DATE 1 JAN 1986 | DIVISION NORTH ATLANTIC<br>DISTRICT NEW YORK | REGION MIDDLE ATLANTIC<br>BASIN NY METROPOLITAN | PROJECT ARDSLEY, NY |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE.

APPROPRIATION TITLE: Construction, General - Reservoir (Flood Control)

PROJECT: Cowanesque Lake, Pennsylvania - Modification (Continuing)

LOCATION: The existing project is located in Tioga County, Pennsylvania, on the Cowanesque River approximately 2.2 miles above its confluence with the Tioga River at Lawrenceville, Pennsylvania. The Cowanesque River is a tributary in the Chemung River Basin.

AUTHORIZATION: Flood Control Act of 1958, modified by the Water Resources Development Act of 1976. The project modification is being accomplished under the discretionary authority of the Chief of Engineers in accordance with the Water Supply Act of 1958, as amended, and the Flood Control Act of 1944, as amended.

BENEFIT-COST RATIO: The remaining benefit-remaining cost ratio is 6.6 to 1 at 8-1/8 percent. The benefit-cost ratio is based on the project functioning independently.

SUMMARIZED FINANCIAL DATA

| -ORIGINAL PROJECT- | | | Accum. % of Est. Fed. Cost |
|---|---|---|---|
| Federal Cost | | $106,031,000 | |
| Non-Federal Cost | | 0 | |
| Reimbursement | $ 0 | | |
| Cash Contribution | 0 | | |
| Other Costs | 0 | | |
| Total Original Project Cost | | $106,031,000 1/ | |

| -PROJECT MODIFICATION- | | |
|---|---|---|
| Estimated Total Appropriation Requirement | | $ 2,690,000 |
| Non-Federal Reimbursement | | $ 1,720,000 |
| Estimated Federal Cost (Ultimate) | | $ 970,000 2/ |
| Estimated Non-Federal Cost | | $ 12,600,000 |
| Reimbursement | $ 1,720,000 | |
| Cash Contributions | 10,880,000 | |
| Other Costs | 0 | |
| Total Estimated Project Modification Cost | | $ 13,570,000 1/ |
| Total Estimated Project Cost | | $119,601,000 |

| STATUS (1 January 1986) | PERCENT COMPLETE | COMPLETION SCHEDULE |
|---|---|---|
| Reservoir Slope Stabilization | 0 | Jun 1987 |
| Recreation (Replacement and Expanded) | 0 | Sep 1988 |
| Dam Modifications | 0 | Sep 1988 |
| Entire Project | 0 | Sep 1988 |

1/ Local interests will reimburse the Federal Government for the cost of existing flood control storage reallocated to water supply storage, presently estimated at $47,690,000.

2/ Reflects 50 percent Federal share for the expanded recreation facilities.

3/ Reflects a $1,735,000 transfer to the project.

4/ Based on the current project schedule.

Division: North Atlantic District: Baltimore Region: Middle Atlantic

| | | |
|---|---|---|
| Allocations to 30 September 1985 | 1,735,000 3/ | |
| Conference Allowance for FY 1986 | 0 | |
| Potential Allocation for FY 1986 | 485,000 4/ | |
| Potential Allocations through FY 1986 | 2,220,000 | 82 |
| Allocation Requested for FY 1987 | 470,000 | 100 |
| Scheduled Balance to Complete after FY 1987 | 0 | |
| Unscheduled Balance to Complete after FY 1987 | 0 | |

## PHYSICAL DATA

### Dam

| Existing Project | Modification |
|---|---|
| Type - Earth and rockfill | No changes |
| Height - 151 feet | |
| Length - 3,100 feet | |

### Reservoir Slope Stabilization - Modification

3,500 feet at the relocated town of Nelson

### Lake Capacity

| Existing Project | | Modification | |
|---|---|---|---|
| Flood Control | -82,000 acre-feet | Flood Control | -56,400 acre-feet |
| Conservation | - 7,000 acre-feet | Water Supply | -25,600 acre-feet |
| Total | 89,000 acre-feet | Conservation | - 7,000 acre-feet |
| | | Total | 89,000 acre-feet |

### Intake Tower - Modification

Extension of existing wet wells and addition of 3 intake port openings

### Access to Spillway and Intake Tower - Modification

Relocation of portions of existing ramps

### Recreation Facilities

| Existing Project | Modification - Replacement | Modification - Expanded Facilities |
|---|---|---|
| Tompkins Area - picnic, 89 campsites, swim beach 1 boat launch | Tompkins Area - swim beach, 1 boat launch | Tompkins Area - 37 campsites, |
| Lawrence Area - picnic, 1 boat launch | Lawrence - picnic | South Shore Area - picnic, swim beach, 1 boat launch |
| Tailrace Access - picnic, fisherman access | South Shore Area - picnic, swim beach, 1 boat launch | |

JUSTIFICATION: The existing Cowanesque Lake project was constructed between 1973 and 1982 and provides flood protection for downstream communities along the Tioga, Chemung, and Susquehanna Rivers in southcentral New York and northeastern Pennsylvania. The project also offers recreation facilities related to water-oriented activities.

The project does not presently provide storage for water supply. The project modification would provide for reallocating 25,600 acre-feet of present flood control storage to water supply storage. The 25,600 acre-feet (or 8.3 billion gallons) of water supply storage would enable two electric utility companies to meet during drought conditions their consumptive use make-up needs as required by the Susquehanna River Basin Commission. Both generating plants could be relied on during periods of low stream flow and would also be prepared for a drought emergency. Adding water supply storage reduces annual flood control benefits by less than one-tenth of one percent. The quality of recreation would improve with the larger lake by providing more surface area and a longer and more diverse shoreline. The quantity of potential recreation opportunities would also improve with the larger lake.

With the provision of expanded recreation facilities to accommodate the expected increase in initial annual visitation from 119,000 to 232,000, the project would help meet part of the regional recreational deficit and would also have a positive impact on the economy of the region. The estimated average annual benefits, based on 1 October 1985 prices, are as follows:

| Breakdown of Benefits | Amount |
|---|---|
| Flood Control (Reduction) | $- 2,000 |
| Water Supply | 6,950,000 |
| Recreation | 450,000 |
| Total | $ 7,398,000 |

Fiscal Year 1987: The requested amount will be applied as follows:

| | |
|---|---|
| Continue construction of expanded recreation facilities | $ 455,000 |
| Supervision and administration | 15,000 |
| Total | $ 470,000 |

NON-FEDERAL COSTS: Consistent with the cost-sharing and financing concepts agreed to by the Administration and Senate Majority leadership, local interests are required to pay all costs allocated to water supply, presently estimated at $59,320,000 for construction (including $11,630,000 for new construction and $47,690,000 as a share of the completed project cost) and $262,000 annually for operation, maintenance, and major replacements; pay one-half of the separable costs allocated to expanded recreation facilities presently estimated at $970,000, and bear all costs of operation, maintenance, and replacement for the expanded facilities, presently estimated at $116,000 annually. Local interests have also agreed to make required payments for the new construction concurrently with project construction, except that costs ($47,690,000) allocated as a share of the completed project may be repaid with interest over a period of 50 years.

STATUS OF LOCAL COOPERATION: The Susquehanna River Basin Commission (SRBC) is the local sponsor for the project modification. By letter dated 10 June 1983, the SRBC stated its intent to contract with the United States to fulfill the requirements of local cooperation for both water supply and expanded recreation development at the project. This intent was reaffirmed in SRBC's letters of 28 August 1984 and 1 July 1985 which cited completion of its special project studies in September 1985 and a follow-on public hearing in December 1985, after which SRBC expects to execute the water supply and recreation contracts with the United States. Negotiations with SRBC on these contracts began in February 1985 and are continuing.

COMPARISON OF FEDERAL COST ESTIMATE: The current Federal cost estimate of $2,690,000 is a decrease of $780,000 from the latest estimate ($3,470,000) submitted to Congress (FY 1985). This change includes increases of $61,000 based on higher price levels to 1 October 1985 and $26,000 for an estimated inflation allowance from 1 October 1985 through the construction period that were more than offset by decreases of $617,000 for post-contract award and other estimating adjustments reflecting completed general design memorandum studies and $250,000 for a schedule change reflecting initiating project construction in FY1986 in lieu of FY1985.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The Final Environmental Impact Statement was filed with the Environmental Protection Agency on 3 December 1982.

The provisions of Section 404 of the Clean Water Act have been met by a Section 404(b)(1) Evaluation on 23 October 1981, a Public Notice issued on 23 October 1981, a Certification issued by the Commonwealth of Pennsylvania on 27 December 1982, and the District Commander's signature on the Final Cowanesque Lake Reformulation Report on 24 February 1982.

OTHER INFORMATION: Funds for initiating planning for the water supply modification were transferred to the project in FY 1984. Initial construction funds were included in the Supplemental Appropriations Act for FY 1985.

At the request of two electric generating utilities and the Susquehanna River Basin Commission, the Corps initiated a study in June 1979 to examine the feasibility of reallocating some flood control storage to water supply storage. The Cowanesque Lake reformulation study was accomplished under the original authority for the project and in accordance with the provisions of the Water Supply Act of 1958, as amended, at a cost of $750,000. The Water Supply Act of 1958, as amended, permits the consideration of municipal and industrial water supply storage in any Corps project in the planning, design, construction, or operational stage. The study, completed in November 1982, recommended that 25,600 acre-feet of existing flood control storage be reallocated to water supply at the project.

The existing recreation facilities were constructed and are operated and maintained at Federal cost as provided by Section 4 of the Flood Control Act of 1944. Under the proposed water supply modification the existing facilities will be replaced in kind, and expanded recreation facilities will be provided. Non-Federal interests must pay for replacing the existing facilities as well as bear the additional operation and maintenance cost associated with the replacement. The cost of the expanded recreation facilities will be shared equally by Federal and non-Federal interests, and the non-Federal interests must assume all of the operation and maintenance cost for the expanded facilities.

## HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: North Atlantic
District: Baltimore

Project: Cowanesque Lake, Pennsylvania - Modification

| Item | Estimates Presented to Congress ($1,000)<br>Original Baseline (1) | Cumulative Changes (2) | Last (3) | Incremental Change (4) | Current (5) |
|---|---|---|---|---|---|
| Federal Cost | 3,470 | | 3,470 | | 2,690 3/ 4/ |
| (Price Level) | (Oct 83) | | (Oct 83) | | |
| Reason for Change | | (0) | | (-780) 4/ | |
| a. Price Escalation | | 0 | | 87 | |
| b. Design Changes | | 0 | | | |
| c. Additional Functions Added Under General Authorization | | 0 | | 0 | |
| d. Authorized Modifications | | 0 | | 0 | |
| e. Post-Contract Award and Other Estimating Adjustments | | 0 | | -617 2/ | |
| f. Schedule Change | | 0 | | -250 1/ | |
| g. Sundry | | 0 | | 0 | |
| h. Real Estate | | 0 | | 0 | |

1/ Reflects deferred construction start from FY1985 to FY1986. The -$250 are construction funds for slope stabilization work that will now be financed by local interests in FY1986 in lieu of being advanced by the Federal Government in FY1985.

2/ Includes -$350 based on reanalysis of requirements for Engineering and Design and Supervision and Administration and -$267 for expanded recreation facilities based on completed general design memorandum studies.

3/ The estimated ultimate Federal cost of the project is $970.

4/ Includes $26 allowance for estimated inflation from 1 October 1985 through the construction period.

REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: FLOOD CONTROL - RESERVOIRS

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM | PROJECT COST ESTIMATE | TOTAL TO 30 SEP 19 85 | CURRENT FY 19 86 | BUDGET FY 19 87 | BALANCE TO COMPLETE AFTER FY 19 87 |
|---|---|---|---|---|---|---|
| | (a) | (b) | (c) | (d) | (e) | (f) |
| 1 | RESERVOIRS | 2,060,000 | | 570,000 | 700,000 | 790,000 |
| 2 | DAMS | 2,035,000 | | 50,000 | 1,145,000 | 840,000 |
| 3 | FISH AND WILDLIFE FACILITIES | 920,000 | | 70,000 | 570,000 | 280,000 |
| 4 | RECREATION FACILITIES | 5,350,000 | | 870,000 | 2,300,000 | 2,180,000 |
| 5 | CULTURAL MITIGATION | 105,000 | | 30,000 | 75,000 | |
| 6 | ENGINEERING AND DESIGN | 2,250,000 | 1,259,500 | 820,500 | 100,000 | 70,000 |
| 7 | SUPERVISION AND ADMINISTRATION | 850,000 | 252,000 | 198,000 | 210,000 | 190,000 |
| 8 | | | | | | |
| 9 | TOTAL APPLIED COST (Fed Funds and | 13,570,000 | 1,511,500 | 2,608,500 | 5,100,000 | 4,350,000 |
| 10 | Non-Fed Contributions) | | | | | |
| 11 | Undistributed Costs - None | | | | | |
| 12 | TOTAL PROJECT COST (Fed Funds and | 13,570,000 | 1,511,500 | 2,608,500 | 5,100,000 | 4,350,000 |
| 13 | Non-Fed Contributions) | | | | | |
| 14 | Pending Adjustments - None | | | | | |
| 15 | TOTAL COST (Fed Funds and | 13,570,000 | 1,511,500 | 2,608,500 | 5,100,000 | 4,350,000 |
| 16 | Non-Fed Contributions) | | | | | |
| 17 | Undelivered Orders | | 149,000 | - 149,000 | | |
| 18 | TOTAL OBLIGATIONS (Fed Funds and | | 1,660,500 | 2,459,500 | 5,100,000 | 4,350,000 |
| 19 | Non-Fed Contributions) | | | | | |
| 20 | | | | | | |
| 21 | FEDERAL FUNDS | | | | | |
| 22 | TOTAL COST | 2,690,000 | 1,511,500 | 708,500 | 470,000 | |
| 23 | Undelivered Orders | | 149,000 | - 149,000 | | |
| 24 | TOTAL OBLIGATIONS | | 1,660,500 | 559,500 | 470,000 | |
| 25 | | | | | | |
| 26 | NON-FEDERAL CONTRIBUTIONS | | | | | |
| 27 | TOTAL COST | 10,880,000 | | 1,900,000 | 4,630,000 | 4,350,000 |
| 28 | Undelivered Orders | | | | | |
| 29 | TOTAL OBLIGATIONS | | | 1,900,000 | 4,630,000 | 4,350,000 |
| 30 | | | | | | |
| 31 | | | | | | |
| 32 | | | | | | |
| 33 | | | | | | |

| | | | |
|---|---|---|---|
| EFFECTIVE DATE<br>1 JAN 86 | DIVISION NORTH ATLANTIC<br>DISTRICT BALTIMORE | REGION MIDDLE ATLANTIC<br>BASIN SUSQUEHANNA RIVER | PROJECT COWANESQUE LAKE, PENNSYLVANIA - MODIFICATION |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE.

REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: FLOOD CONTROL - RESERVOIRS

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM<br>(a) | PROJECT COST ESTIMATE<br>(b) | TOTAL TO 30 SEP 19 85<br>(c) | CURRENT FY 19 86<br>(d) | BUDGET FY 19 87<br>(e) | BALANCE TO COMPLETE AFTER FY 19 87<br>(f) |
|---|---|---|---|---|---|---|
| 1 | METHOD OF FINANCING | | | | | |
| 2 | FEDERAL FUNDS | | | | | |
| 3 | ALLOCATIONS | | 1,735,000 1/ | 485,000 2/ | | |
| 4 | UNOBLIGATED CARRYOVER FROM PRIOR YEAR | | | 74,500 | | |
| 5 | TOTAL FUNDS AVAILABLE FOR OBLIGATION | | | 559,500 | | |
| 6 | APPROPRIATIONS REQUIRED | | | | 470,000 | |
| 7 | | | | | | |
| 8 | NON-FEDERAL CONTRIBUTIONS | | | | | |
| 9 | CONTRIBUTED FUNDS | | | | | |
| 10 | UNOBLIGATED CARRYOVER FROM PRIOR YEAR | | | | | |
| 11 | TOTAL FUNDS AVAILABLE FOR OBLIGATION | | | | | |
| 12 | CONTRIBUTIONS REQUIRED | | | 1,900,000 | 4,630,000 | 4,350,000 3/ |
| 13 | | | | | | |
| 14 | | | | | | |
| 15 | 1/ Reflects a $1,735,000 transfer to the project. | | | | | |
| 16 | 2/ Reflects a $485,000 potential allocation for FY 1986. | | | | | |
| 17 | 3/ In addition, local interests must reimburse the Federal Government $1,720,000 for advancing planning | | | | | |
| 18 | through FY 1985 pending completion of a cost sharing contract with the Susquehanna River Basin | | | | | |
| 19 | Commission. The $1,720,000 will be repaid by the Commission during construction. | | | | | |
| 20 | | | | | | |
| 21 | | | | | | |
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| 31 | | | | | | |
| 32 | | | | | | |
| 33 | | | | | | |

| | | | |
|---|---|---|---|
| EFFECTIVE DATE<br>1 JAN 86 | DIVISION NORTH ATLANTIC<br>DISTRICT BALTIMORE | REGION MIDDLE ATLANTIC<br>BASIN SUSQUEHANNA | PROJECT COWANESQUE LAKE, PENNSYLVANIA - MODIFICATION |

ENG FORM 1 SEP 74 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE.

APPROPRIATION TITLE: Construction, General - Local Protection (Flood Control)

PROJECT: Richmond, Virginia (Continuing Construction)

LOCATION: The project is located in the city of Richmond, Virginia and is bordered on the north by Henrico County and on the South by Chesterfield County.

AUTHORIZATION: Authorized under the provisions of the FY 1985 Supplemental Appropriations Act (PL 99-88).

BENEFIT TO COST RATIO: The remaining benefit-remaining cost ratio is 1.15 to 1 at 8-1/8 percent. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1985) was 1.10 to 1. The benefit-cost ratio is based on the project functioning independently.

| SUMMARIZED FINANCIAL DATA | | | | ACCUM. % OF EST. FED. COST |
|---|---|---|---|---|
| Estimated Federal cost | | $72,200,000 | | |
| Estimated Non-Federal | | 24,070,000 | | |
| Cash Contribution | $ 5,080,000 | | | |
| Other Costs | $18,990,000 | | | |
| Total Estimated Project Cost | | $96,270,000 | | |
| Allocations to 30 September 1985 | | | $ 15,000 | |
| Conference Allowance for FY 1986 | | | 1,240,000 | |
| Potential Allocation for FY 1986 | | | 1,625,000 | 1/2/ |
| Potential Allocations through FY 1986 | | | 1,640,000 | |
| Allocation Requested for FY 1987 | | | 1,200,000 | 0 |
| Scheduled Balance to Complete after FY 1987 | | | 69,360,000 | |
| Unscheduled Balance to Complete after FY 1987 | | | 0 | |

1/ Based on the current project schedule.
2/ Reflects a $400,000 transfer to the project.

| STATUS: 1 January 1986 | PERCENT COMPLETE | COMPLETION SCHEDULE |
|---|---|---|
| Entire Project | 0 | September 1991 |

PHYSICAL DATA

a. Northside area. Concrete cantilever floodwalls, 4,120 feet long, 8 railroad and street closures, and associated interior drainage facilities including a pumping station. Average height is 22 feet for the cantilever walls.

b. Southside area. Concrete cantilever floodwalls, 2,000 feet long, earth levees, 8,050 feet long, 10 railroad and street closures, relocation of 3 industries, modification of a railroad bridge, and associated interior drainage facilities including ponding areas and 2 pumping stations. Average heights are 24 feet and 22 feet for the floodwall and levee, respectively.

Division: North Atlantic

District: Norfolk

Region: Middle Atlantic
Richmond, Virginia

JUSTIFICATION: The James River flows directly through the city separating its business district into two areas, Shockoe Creek on the north bank and the major industrial-commercial complex on the South Side. Much of Richmond, including most of the residential development, is above the highest known flood stages. However, flooding in the Shockoe Creek and the South Side areas has resulted in serious and extended business losses to industries and commercial activities, disruption of rail and highway transportation, and prolonged interruption of public utility operations. The city of Richmond has experienced three major floods in recent history. In August 1969, the remnants of Hurricane Camille passed over Virginia causing severe flooding in the city. A reoccurrence of this flood would result in approximately $39,000,000 in damages (Oct 1985 price levels). In June 1972, Hurricane Agnes caused flooding about 8 feet higher than that experienced in 1969. A reoccurrence of this flood would result in approximately $112,000,000 in damages (Oct 1985 price levels). In November 1985 the city experienced another major flood that was 2 feet higher than that experienced in 1969.

FISCAL YEAR 1987: The requested amount of $1,200,000 will be used to continue planning and engineering and initiate construction.

NON-FEDERAL COSTS: Consistent with the cost-sharing and financing concepts agreed to by the Administration and Senate Majority Leadership, local interests will be required to provide lands, easements, rights-of-way, and material disposal areas, presently estimated at $9,000,000; modify or relocate utilities, roads, and interior drainage facilities, except modification of railroad bridges, where necessary in the construction of the project, presently estimated at $9,990,000; and make a cash contribution to increase their share to 25 percent of total construction costs, presently estimated at $5,080,000; and accept responsibility for operation and maintenance of the project, presently estimated at $543,000 annually.

STATUS OF LOCAL COOPERATION: On September 22, 1980, the Richmond City Council adopted a resolution indicating its intent to provide the local cooperation under traditional cost-sharing at an estimated cost of $19,100,000. The non-Federal share will increase under the cost sharing and financing concepts agreed to by the Administration and Senate Majority Leadership. Indications are that the City is anxious to proceed at the higher cost sharing. The City Manager requested, by letter dated 26 Aug 85, that construction of the project be expedited, and by letter dated 28 Oct 85, stated that the City will proceed with a draft local cooperation agreement to be sent to the Secretary of the Army early in 1986. A final local cooperation agreement is expected to be executed by June 1986.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $72,200,000 is a decrease of $200,000 from the latest estimate ($72,400,000) submitted to Congress (FY 1985). This change reflects an increase of $5,754,000 based on higher price levels to 1 October 1985; and $12,800,000 for an estimated inflation allowance from 1 October 1985 through the construction period; offset by a reduction of $18,754,000 to reflect design changes and reanalysis of requirements.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The Final Environmental Impact Statement and Supplement were filed with CEQ on 8 Oct 76 and 24 Jul 81 respectively.

OTHER INFORMATION: This project was included among those to be started under the FY 1985 Supplemental Appropriations Act.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: North Atlantic
District: Norfolk

Project: Richmond, Virginia

| Item | Estimates Presented to Congress ($1,000) | | | | |
|---|---|---|---|---|---|
| | Original Baseline | Cumulative Changes | Last | Incremental Change | Current |
| Federal Cost<br>(Price Level) | 72,400<br>(Oct 83) | | 72,400<br>(Oct 83) | | 72,200 1/ |
| Reason for Change | | 0 | | (-200) | |
| a. Price Escalation | | 0 | | 18,554 1/ | |
| b. Design Changes | | 0 | | -15,634 2/ | |
| c. Additional Function Added Under General Authority | | 0 | | 0 | |
| d. Authorized Modification | | 0 | | -3,120 3/ | |
| e. Post-Contract Award and Other Estimating Adjustments | | 0 | | 0 | |
| f. Schedule Changes | | 0 | | 0 | |
| g. Sundry | | 0 | | 0 | |
| h. Real Estate | | 0 | | 0 | |

1/ Includes $12,800 allowance for estimated inflation from 1 October 1985 through the construction period.

2/ Reflects cantilever T-Wall Cross Section on North Side instead of more costly concrete gravity wall, and other refinements.

3/ Reflects reanalysis of requirements.

REPORTS CONTROL SYMBOL:

| | |
|---|---|
| APPROPRIATION TITLE: CONSTRUCTION GENERAL | CLASSIFICATION:<br>LOCAL PROTECTION (FLOOD CONTROL) |

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM (a) | PROJECT COST ESTIMATE (b) | TOTAL TO 30 SEP 19 85 (c) | CURRENT FY 19 86 (d) | BUDGET FY 1987 (e) | BALANCE TO COMPLETE AFTER FY 19 87 (f) |
|---|---|---|---|---|---|---|
| 1 | FY 1985 Supplemental Appropriation Act | (HD 98/178/2) | | | | |
| 2 | | | | | | |
| 3 | Relocations | 900,000 | – | – | 100,000 | 800,000 |
| 4 | Roads, Railroads and Bridges | 3,700,000 | – | – | – | 3,700,000 |
| 5 | Levees and Floodwalls | 33,800,000 | – | – | – | 33,800,000 |
| 6 | Pumping Plants | 34,400,000 | – | – | – | 34,400,000 |
| 7 | Engineering and Design | 6,900,000 | – | 1,480,000 | 920,000 | 4,500,000 |
| 8 | Supervision and Administration | 6,500,000 | – | 160,000 | 180,000 | 6,160,000 |
| 9 | Total Applied Cost (Fed & Non-Fed Req'd) | 86,200,000 | – | 1,640,000 | 1,200,000 | 83,360,000 |
| 10 | Undistributed Cost (None) | – | – | – | – | – |
| 11 | Total Project Cost (Fed & Non-Fed Req'd) | 86,200,000 | – | 1,640,000 | 1,200,000 | 83,360,000 |
| 12 | Pending Adjusted (None) | – | – | – | – | – |
| 13 | Total Project Cost (Fed & Non-Fed Req'd) | 86,200,000 | – | 1,640,000 | 1,200,000 | 83,360,000 |
| 14 | Undelivered Orders (None) | – | – | – | – | – |
| 15 | Total Obligations | | – | 1,640,000 | 1,200,000 | 83,360,000 |
| 16 | | | | | | |
| 17 | Federal Funds | | | | | |
| 18 | Total Applied Cost | 72,200,000 | – | 1,640,000 | 1,200,000 | 69,360,000 |
| 19 | Undistributed Cost (None) | – | – | – | – | – |
| 20 | Total Project Cost | 72,200,000 | – | 1,640,000 | 1,200,000 | 69,360,000 |
| 21 | Pending Adjustments (None) | – | – | – | – | – |
| 22 | Total Cost | 72,200,000 | – | 1,640,000 | 1,200,000 | 69,360,000 |
| 23 | Undelivered Orders (None) | – | – | – | – | – |
| 24 | Total Obligations | | – | 1,640,000 | 1,200,000 | 69,360,000 |
| 25 | | | | | | |
| 26 | Non-Federal Funds (Required Only 1/) | | | | | |
| 27 | Total Applied Cost | 14,000,000 | – | – | – | 14,000,000 |
| 28 | Undistributed Cost (None) | – | – | – | – | – |
| 29 | Total Project Cost | 14,000,000 | – | – | – | 14,000,000 |
| 30 | Pending Adjustment (None) | – | – | – | – | – |
| 31 | Total Cost | 14,000,000 | – | – | – | 14,000,000 |
| 32 | Undelivered Orders (None) | | – | – | – | – |
| 33 | Total Obligations | | – | – | – | 14,000,000 |

| | | | |
|---|---|---|---|
| EFFECTIVE DATE<br>1 Jan 86 | DIVISION<br>NORTH ATLANTIC<br>DISTRICT NORFOLK | REGION<br>MIDDLE ATLANTIC<br>BASIN JAMES RIVER | PROJECT<br>RICHMOND, VIRGINIA |

ENG FORM 1 SEP 76 2200 (ER 11–2–240) EDITION OF 1 NOV 74 IS OBSOLETE.

REPORTS CONTROL SYMBOL:

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: LOCAL PROTECTION (FLOOD CONTROL)

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM (a) | PROJECT COST ESTIMATE (b) | TOTAL TO 30 SEP 19 85 (c) | CURRENT FY 1986 (d) | BUDGET FY 1987 (e) | BALANCE TO COMPLETE AFTER FY 19 87 (f) |
|---|---|---|---|---|---|---|
| 1 | Method of Financing | | | | | |
| 2 | Federal Funds | 72,200,000 | | | | |
| 3 | Allocations | | 15,000 | 1,625,000 | | |
| 4 | Unobligated Carryover From Prior Years | | | 15,000 | | |
| 5 | Total Funds Available for Obligation | | | 1,640,000 | | |
| 6 | Appropriation Required | | | | 1,200,000 | 69,360,000 |
| 7 | | | | | | |
| 8 | Non-Federal Funds (Required Only) 1/ | 14,000,000 | | | | |
| 9 | Contributions | | - | - | | |
| 10 | Unobligated Carryover From Prior Years | | | - | | |
| 11 | Total Funds Available for Obligation | | | - | | |
| 12 | Contribution Required | | | | - | 14,000,000 |
| 13 | | | | | | |
| 14 | | | | | | |
| 15 | | | | | | |
| 16 | | | | | | |
| 17 | | | | | | |
| 18 | | | | | | |
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| 20 | | | | | | |
| 21 | | | | | | |
| 22 | 1/ Excludes $10,070,000 Non-Federal Funds (Other) | | | | | |
| 23 | | | | | | |
| 24 | | | | | | |
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|---|---|---|---|
| EFFECTIVE DATE<br>1 Jan 86 | DIVISION NORTH ATLANTIC<br>DISTRICT NORFOLK | REGION MIDDLE ATLANTIC<br>BASIN JAMES RIVER | PROJECT<br>RICHMOND, VIRGINIA |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE.

APPROPRIATION TITLE: Construction, General - Local Protection (Flood Control)

PROJECT: Virginia Beach Streams, Canal No. 2, Virginia (Continuing Construction)

LOCATION: The project is located within the corporate limits of the city of Virginia Beach, Virginia.

AUTHORIZATION: Authorized in 1976 under the provisions of Section 201 of the Flood Control Act of 1965.

BENEFIT TO COST RATIO: The remaining benefit-remaining cost ratio is 1.83 to 1 at 8-1/8 percent. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1985) was 1.17 to 1. The benefit-cost ratio is based on the project functioning independently.

| SUMMARIZED FINANCIAL DATA | | | | ACCUM. % OF EST. FED. COST |
|---|---|---|---|---|
| Estimated Federal cost | | $4,600,000 | | |
| Estimated Non-Federal | | 1,530,000 | | |
| Cash Contribution | $ 470,000 | | | |
| Other Costs | $1,060,000 | | | |
| Total Estimated Project Cost | | $6,130,000 | | |
| Allocations to 30 September 1985 | | | $ 435,000 | |
| Conference Allowance for FY 1986 | | | 0 | |
| Potential Allocation for FY 1986 | | | 485,000 1/ | |
| Potential Allocations through FY 1986 | | | 920,000 | |
| Allocation Requested for FY 1987 | | | 2,200,000 | 68 |
| Scheduled Balance to Complete after FY 1987 | | | 1,480,000 | |
| Unscheduled Balance to Complete after FY 1987 | | | 0 | |

1/ Based on the current project schedule.

| STATUS: 1 January 1986 | PERCENT COMPLETE | COMPLETION SCHEDULE |
|---|---|---|
| Entire Project | 0 | June 1988 |

PHYSICAL DATA

The project involves construction of a new canal for a length of 2.6 miles and channelization of an existing canal for a length of 1.1 miles. The canal bottom will range in width from 45 feet to 80 feet and in depth from -4 feet M.S.L. to -8 M.S.L. with a flow capacity great enough to carry a 100 year flood.

JUSTIFICATION: The Virginia Beach area is subject to coastal storms and hurricanes. One of the greatest area rainfalls of record occurred during the period 31 August to 1 September 1964 during the passage of Hurricane Cleo. Over 100 houses were flooded to a depth of 1 foot above the first floor level and many streets were either blocked or washed out. The amount of damage expected from rainfall events similar to Hurricane Cleo is about $8.90 Million at 1 October 1985 prices. The authorized improvement would reduce flood damages primarily to residential properties located in the flood plain by improving drainage conditions. The average annual benefits are $500,000, based on 1 October 1985 prices.

Division: North Atlantic

District: Norfolk

Region: Middle Atlantic
Virginia Beach Streams
Canal No. 2, Virginia

FISCAL YEAR 1987: The requested amount of $2,200,000 will be used to continue construction of the project initiated in FY 1986.

NON-FEDERAL COSTS: Consistent with the cost-sharing and financing concepts agreed to by the Administration and Senate Majority Leadership, local interests will be required to provide lands, easements, rights-of-way, and material disposal areas presently estimated at $313,000; and modify International Parkway Bridge and relocate Rose Memorial Cemetery, presently estimated at $747,000; and make a cash contribution to increase their cost to 25 percent of the costs allocated to flood control, presently estimated at $470,000. Local interests have also agreed to make all required payments and voluntary contributions concurrently with project construction.

STATUS OF LOCAL COOPERATION: By letter dated 9 September 1985, the City of Virginia Beach expressed its intent to cooperate with the Federal Government to begin construction of the project in accordance with the Administration's proposed innovative financing and contribute such additional funds as may be necessary to bring the non-Federal cost to at least 25 percent of the total project cost. Negotiations with the City of Virginia Beach are in progress. A local cooperation agreement is expected to be executed by February 1986.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $4,600,000 is an increase of $730,000 from the latest estimate ($3,870,000) submitted to Congress (FY 1985). This change reflects an increase of $400,000 based on higher price levels to 1 October 1985; and $330,000 for an estimated inflation allowance from 1 October 1985 through the construction period.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The final environmental impact statement was filed with CEQ on 8 October 1976. A final supplement to the final environmental impact statement was filed with EPA on 24 July 1981.

The provisions of Section 404 of the Clean Water Act were met by a Section 404(b)(1) Evaluation Report dated September 1980. The Water Quality Certification from the State of Virginia is dated July 1981, and the District Engineer's signature on the Phase I General Design Memorandum is dated September 1980. The date of the Public Notice is January 1980.

OTHER INFORMATION: This project was included among those to be started under the FY 1985 Supplemental Appropriation Act.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: North Atlantic
District: Norfolk

Project: Virginia Beach Streams, Canal No. 2, Virginia

| Item | Estimates Presented to Congress ($1,000) | | | | |
|---|---|---|---|---|---|
| | Original Baseline | Cumulative Changes | Last | Incremental Change | Current |
| Federal Cost<br>(Price Level) | 3,870<br>(Oct 83) | | 3,870<br>(Oct 83) | | 4,600 1/ |
| Reason for Change | | 0 | | (730) 1/ | |
| a. Price Escalation | | 0 | | 730 | |
| b. Design Changes | | 0 | | 0 | |
| c. Additional Function Added Under General Authority | | 0 | | 0 | |
| d. Authorized Modification | | 0 | | 0 | |
| e. Post-Contract Award and Other Estimating Adjustments | | 0 | | 0 | |
| f. Schedule Changes | | 0 | | 0 | |
| g. Sundry | | 0 | | 0 | |
| h. Real Estate | | 0 | | 0 | |

1/ Includes $330 allowance for estimated inflation from 1 October 1985 through the construction period.

REPORTS CONTROL SYMBOL:

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: LOCAL PROTECTION (FLOOD CONTROL)

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM | PROJECT COST ESTIMATE | TOTAL TO 30 SEP 19 85 | CURRENT FY 1986 | BUDGET FY 1987 | BALANCE TO COMPLETE AFTER FY 19 87 |
|---|---|---|---|---|---|---|
| | (a) | (b) | (c) | (d) | (e) | (f) |
| 1 | Section 201 (a) 1985(HD 94/649/2) Approved October 1976. | | | | | |
| 2 | | | | | | |
| 3 | RELOCATIONS | 50,000 | - | - | 50,000 | - |
| 4 | CANALS | 4,306,000 | - | 641,000 | 2,285,000 | 1,380,000 |
| 5 | ENGINEERING AND DESIGN | 445,000 | 373,800 | 30,000 | 20,000 | 21,200 |
| 6 | SUPERVISION AND ADMINISTRATION | 275,000 | 46,200 | 70,000 | 80,000 | 78,800 |
| 7 | TOTAL APPLIED COST (FED & NON-FED REQ'D) | 5,076,000 | 420,000 | 741,000 | 2,435,000 | 1,480,000 |
| 8 | Undistributed cost (None) | - | - | - | - | - |
| 9 | TOTAL PROJECT COST (FED & NON-FED REQ'D) | 5,076,000 | 420,000 | 741,000 | 2,435,000 | 1,480,000 |
| 10 | Pending Adjusted (None) | - | - | - | - | - |
| 11 | TOTAL PROJECT COST (FED & NON-FED REQ'D) | 5,076,000 | 420,000 | 741,000 | 2,435,000 | 1,480,000 |
| 12 | Undelivered Orders (None) | - | - | - | - | - |
| 13 | TOTAL OBLIGATIONS | | 420,000 | 741,000 | 2,435,000 | 1,480,000 |
| 14 | | | | | | |
| 15 | FEDERAL FUNDS | | | | | |
| 16 | TOTAL APPLIED COST | 4,600,000 | 420,000 | 500,000 | 2,200,000 | 1,480,000 |
| 17 | Undistributed cost (None) | - | - | - | - | - |
| 18 | TOTAL PROJECT COST | 4,600,000 | 420,000 | 500,000 | 2,200,000 | 1,480,000 |
| 19 | Pending Adjustments (None) | - | - | - | - | - |
| 20 | TOTAL COST | 4,600,000 | 420,000 | 500,000 | 2,200,000 | 1,480,000 |
| 21 | Undelivered Orders (None) | - | - | - | - | - |
| 22 | TOTAL OBLIGATIONS | | 420,000 | 500,000 | 2,200,000 | 1,480,000 |
| 23 | | | | | | |
| 24 | NON-FEDERAL FUNDS (REQUIRED ONLY 1/) | | | | | |
| 25 | TOTAL APPLIED COST | 476,000 | - | 241,000 | 235,000 | - |
| 26 | Undistributed Cost (None) | - | - | - | - | - |
| 27 | TOTAL PROJECT COST | 476,000 | - | 241,000 | 235,000 | - |
| 28 | Pending Adjustment (None) | - | - | - | - | - |
| 29 | TOTAL COST | 476,000 | - | 241,000 | 235,000 | - |
| 30 | Undelivered Orders (None) | - | - | - | - | - |
| 31 | TOTAL OBLIGATIONS | | - | 241,000 | 235,000 | - |
| 32 | | | | | | |
| 33 | | | | | | |

| | | | |
|---|---|---|---|
| EFFECTIVE DATE<br>1 Jan 86 | DIVISION NORTH ATLANTIC<br>DISTRICT NORFOLK | REGION MIDDLE ATLANTIC<br>BASIN ATLANTIC COAST OF VA | PROJECT VIRGINIA BEACH STREAMS, CANAL NO. 2, VIRGINIA |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE.

REPORTS CONTROL SYMBOL:

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: LOCAL PROTECTION (FLOOD CONTROL)

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM (a) | PROJECT COST ESTIMATE (b) | TOTAL TO 30 SEP 19 85 (c) | CURRENT FY 1986 (d) | BUDGET FY 1987 (e) | BALANCE TO COMPLETE AFTER FY 1987 (f) |
|---|---|---|---|---|---|---|
| 1 | METHOD OF FINANCING | | | | | |
| 2 | FEDERAL FUNDS | 4,600,000 | | | | |
| 3 | ALLOCATIONS | | 435,000 | 485,000 | | |
| 4 | UNOBLIGATED CARRYOVER FROM PRIOR YEARS | | | 15,000 | | |
| 5 | TOTAL FUNDS AVAILABLE FOR OBLIGATION | | | 500,000 | | |
| 6 | APPROPRIATION REQUIRED | | | | 2,200,000 | 1,480,000 |
| 7 | | | | | | |
| 8 | NON-FEDERAL FUNDS (REQUIRED ONLY) 1/ | 476,000 | | | | |
| 9 | CONTRIBUTIONS | | - | 241,000 | | |
| 10 | UNOBLIGATED CARRYOVER FROM PRIOR YEARS | | | - | | |
| 11 | TOTAL FUNDS AVAILABLE FOR OBLIGATION | | | 241,000 | | |
| 12 | CONTRIBUTION REQUIRED | | | | 235,000 | - |
| 13 | | | | | | |
| 14 | | | | | | |
| 15 | | | | | | |
| 16 | | | | | | |
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| 28 | | | | | | |
| 29 | | | | | | |
| 30 | | | | | | |
| 31 | 1/ Excludes $1,054,000 NON-FEDERAL FUNDS (OTHER) | | | | | |
| 32 | | | | | | |
| 33 | | | | | | |

| EFFECTIVE DATE | DIVISION / DISTRICT | REGION / BASIN | PROJECT |
|---|---|---|---|
| 1 Jan 86 | DIVISION NORTH ATLANTIC<br>DISTRICT NORFOLK | REGION MIDDLE ATLANTIC<br>BASIN ATLANTIC COAST OF VA | VA BEACH STREAMS, CANAL NO. 2, VIRGINIA |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE.

## NORTH ATLANTIC DIVISION
## JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General FY 1987

1. Navigation

a. Channels and Harbors

The program request of $121,881,000 provides for essential maintenance work on 41 channel and harbor projects named in the list which follows. The work to be accomplished under this activity consists of maintaining the navigation channels and harbors and anchorages of coastal harbors and waterways by means of dredging, snagging, and operation or repair of navigation structures, all as authorized by the laws adopting river and harbor projects.

| | OBLIGATIONS | | | |
|---|---|---|---|---|
| | Actual FY 1985 $ | Estimated FY 1986 $ | Estimated FY 1987 $ | Explanation of Major Changes |
| Delaware | | | | |
| IWW, from Delaware River to Chesapeake Bay, DE & MD | 12,048,800 | 12,922,000 | 21,096,000 | Variation in dredging requirements; includes major rehabilitation of C&D canal bridges in FY 87 at $7,750,000: see justification following this table |
| IWW, Rehoboth Bay to Delaware Bay | 48,700 | 296,000 | 30,000 | Remove deteriorated sheetpile jetty in FY 86 |
| Mispillion River | 110,600 | 140,000 | 325,000 | Repair channel embankment and bank stabilization in FY 85 and FY 86; periodic dredging in FY 87 |
| Murderkill River | 0 | 30,000 | 335,000 | Periodic dredging in FY 87 |

NORTH ATLANTIC DIVISION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

1. Navigation: (Cont'd)

a. Channels and Harbors (Cont'd)

| | OBLIGATIONS | | | |
|---|---|---|---|---|
| | Actual FY 1985 $ | Estimated FY 1986 $ | Estimated FY 1987 $ | Explanation of Major Changes |
| **Delaware** (Cont'd) | | | | |
| Wilmington Harbor | 3,245,800 | 3,932,000 | 9,794,000 | Variation in dredging requirements; construct new disposal area in FY 86 and FY 87 |
| **District of Columbia** | | | | |
| Washington Harbor | 206,800 | 29,000 | 32,000 | Periodic dredging in FY 85 |
| **Maryland** | | | | |
| Baltimore Harbor & Channels | 15,637,000 | 12,072,000 | 12,511,000 | Variation in dredging requirements |
| Chester River | 0 | 40,000 | 467,000 | Periodic dredging in FY 87 |

NORTH ATLANTIC DIVISION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

1. Navigation: (Cont'd)

a. Channels and Harbors (Cont'd)

| | OBLIGATIONS | | | |
|---|---|---|---|---|
| | Actual FY 1985 | Estimated FY 1986 | Estimated FY 1987 | Explanation of Major Changes |
| | $ | $ | $ | |
| Maryland (Cont'd) | | | | |
| Claiborne Harbor | 95,100 | 117,000 | 463,000 | Repair of revetment in FY 86; dredging in FY 87 |
| Fishing Creek | 80,500 | 313,000 | 423,000 | Engineering and design in FY 85 for repair of jetties in FY 86; dredging in FY 87 |
| Nanticoke River Northwest Fork | 0 | 0 | 733,000 | Periodic dredging |
| Ocean City Harbor & Inlet Sinepuxent Bay | 781,000 | 435,000 | 494,000 | Variation in dredging requirements; fill in scour hole adjacent to south jetty in FY 85 |
| Tred Avon River | 36,000 | 0 | 1,165,000 | Periodic Dredging in FY 87 |
| Wicomico River | 681,000 | 1,089,000 | 941,000 | Variation in dredging requirements |

NORTH ATLANTIC DIVISION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

1. Navigation: (Cont'd)

a. Channels and Harbors (Cont'd)

| | OBLIGATIONS | | | |
|---|---|---|---|---|
| | Actual FY 1985 | Estimated FY 1986 | Estimated FY 1987 | Explanation of Major Changes |
| | $ | $ | $ | |
| New Jersey | | | | |
| Barnegat Inlet | 287,200 | 389,000 | 487,000 | Variation in dredging requirements |
| Cold Spring Inlet | 0 | 108,000 | 122,000 | Dredging in FY 86 and FY 87 |
| Delaware River Philadelphia to the Sea, PA, NJ and DE | 25,138,000 | 18,911,000 | 20,146,000 | Variation in dredging requirements; raise height of disposal area in FY 85 |
| Delaware River, Philadelphia to Trenton | 3,323,100 | 2,735,000 | 4,660,000 | Variation in dredging requirements |
| Newark Bay, Hackensack & Passaic Rivers | 24,900 | 955,000 | 2,021,000 | Dredging in FY 86 and FY 87 |
| New Jersey Intracoastal Waterway | 1,002,300 | 3,679,000 | 3,290,000 | Variation in dredging requirements; bulkhead protective coating in FY 86 and FY 87 |
| Salem River | 45,000 | 35,000 | 718,000 | Periodic dredging in FY 87 |

NORTH ATLANTIC DIVISION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

1. Navigation: (Cont'd)

a. Channels and Harbors (Cont'd)

OBLIGATIONS

| | Actual FY 1985 | Estimated FY 1986 | Estimated FY 1987 | Explanation of Major Changes |
|---|---|---|---|---|
| | $ | $ | $ | |
| New York | | | | |
| Bay Ridge & Red Hook Channels | 7,057,300 | 1,202,000 | 1,935,000 | Variation in dredging requirements |
| Fire Island to Jones Inlet | 1,684,400 | 665,000 | 1,650,000 | Periodic dredging in FY 85 and FY 87 |
| Hudson River | 1,172,800 | 3,494,000 | 5,282,000 | Repair dike in FY 85; dredging in FY 86 and FY 87 |
| Jones Inlet | 1,699,800 | 87,000 | 2,142,000 | Periodic dredging in FY 85 and FY 87 |
| Long Island Intracoastal Waterway | 0 | 1,150,000 | 1,290,000 | Dredging in FY 86 and FY 87 |
| Narrows of Lake Champlain NY & VT | 29,300 | 302,000 | 36,000 | Periodic dredging in FY 86 |
| New York Harbor | 3,432,900 | 2,833,000 | 6,161,000 | Variation in dredging requirements |

NORTH ATLANTIC DIVISION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

1. Navigation: (Cont'd)

a. Channels and Harbors (Cont'd)

| | OBLIGATIONS | | | |
|---|---|---|---|---|
| | Actual FY 1985 | Estimated FY 1986 | Estimated FY 1987 | Explanation of Major Changes |
| | $ | $ | $ | |
| New York (Cont'd) | | | | |
| New York & New Jersey Channels | 1,161,000 | 2,962,000 | 2,732,000 | Variation in dredging requirements |
| Rondout Harbor | 0 | 93,000 | 1,500,000 | Repair breakwater in FY 87 |
| Pennsylvania | | | | |
| Schuylkill River | 1,638,500 | 371,000 | 3,227,000 | Variation in dredging requirements |

NORTH ATLANTIC DIVISION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

1. Navigation: (Cont'd)

a. Channels and Harbors (Cont'd)

| | OBLIGATIONS | | | |
|---|---|---|---|---|
| | Actual FY 1985 | Estimated FY 1986 | Estimated FY 1987 | Explanation of Major Changes |
| | $ | $ | $ | |
| Virginia | | | | |
| Atlantic Intracoastal Waterway | 2,530,600 | 2,585,000 | 1,972,000 | Variation in maintenance of bridge and lock items; bulkhead repairs in FY 85 and FY 86; periodic dredging of Lower North Landing River in FY 86; Caretaker Status of Dismal Swamp Canal route in FY 87 |
| Cape Charles City Harbor | 0 | 1,218,000 | 1,392,000 | Dredging in FY 86 and FY 87 |
| Chincoteague Inlet | 918,000 | 1,243,000 | 836,000 | Variation in dredging requirements |
| James River | 1,538,900 | 2,536,000 | 1,198,000 | Variation in dredging requirements; construction of disposal area in FY 86 |
| Lynnhaven Inlet | 510,500 | 0 | 614,000 | Periodic dredging |
| Norfolk Harbor | 3,816,900 | 7,653,000 | 5,886,000 | Variation in dredging requirements |

NORTH ATLANTIC DIVISION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

1. Navigation: (Cont'd)

a. Channels and Harbors (Cont'd)

OBLIGATIONS

| | Actual FY 1985 | Estimated FY 1986 | Estimated FY 1987 | Explanation of Major Changes |
|---|---|---|---|---|
| | $ | $ | $ | |
| Virginia (Cont'd) | | | | |
| Tangier Channel | 536,300 | 6,000 | 375,000 | Periodic dredging in FY 85 and FY 87 |
| Thimble Shoal Channel | 65,700 | 0 | 1,021,000 | Periodic dredging |
| Waterway on the Coast of Virginia | 212,000 | 1,548,000 | 1,659,000 | Variation in dredging requirements |
| York River | 16,500 | 300,000 | 720,000 | Channel condition surveys in FY 85; dredging in FY 86 and FY 87 |
| Other Projects Maintained Periodically | 14,673,500 | 9,323,000 | | |
| Total - Channels & Harbors | 105,486,700 | 97,798,000 | 121,881,000 | |
| b. Locks & Dams - NONE | | | | |
| TOTAL NAVIGATION | 105,486,700 | 97,798,000 | 121,881,000 | |

NORTH ATLANTIC DIVISION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

2. Flood Control

a. Reservoirs

The program request of $11,459,000 provides for the operational requirements of 20 flood control reservoirs and scheduling of flood control reservoir operation. Requirements include: operation and ordinary maintenance of project facilities; labor, supplies, materials and parts required for day-to-day functioning; periodic maintenance, repairs and replacements; and contract law enforcement. The requested amount also includes application of special recreation use fees for recreation areas and recreation facilities at completed projects.

OBLIGATIONS

| | Actual FY 1985 | Estimated FY 1986 | Estimated FY 1987 | Explanation of Major Changes |
|---|---|---|---|---|
| | $ | $ | $ | |
| **Maryland** | | | | |
| Bloomington Lake, MD & W. VA | 1,160,200 | 1,356,000 | 1,022,000 | Prepare flood emergency plans in FY 85; access road repair in FY 86 |
| **New York** | | | | |
| Almond Lake | 379,500 | 225,000 | 268,000 | Increased debris removal in FY 85; seismologic earthquake study and periodic inspection in FY 87 |

NORTH ATLANTIC DIVISION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

2. Flood Control (Cont'd)

a. Reservoirs (Cont'd)

| | OBLIGATIONS | | | |
|---|---|---|---|---|
| | Actual FY 1985 | Estimated FY 1986 | Estimated FY 1987 | Explanation of Major Changes |
| | $ | $ | $ | |
| New York (Cont'd) | | | | |
| Arkport Dam | 130,700 | 121,000 | 157,000 | Periodic inspection and seismologic earthquake study in FY 87 |
| East Sidney Lake | 262,100 | 213,000 | 277,000 | Purchase furnace for garage shop and paving access road in FY 85; spillway modification design in FY 87 |
| Whitney Point Lake | 304,800 | 398,000 | 232,000 | Installed new electrical system and power panel in FY 85; embankment stability and spillway weir stability analyses in FY 86 |
| Pennsylvania | | | | |
| Alvin R. Bush Dam | 427,300 | 305,000 | 305,000 | Pave access roads and insulate shop building in FY 85 |

NORTH ATLANTIC DIVISION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

2. Flood Control (Cont'd)

a. Reservoirs (Cont'd)

| | OBLIGATIONS | | | |
|---|---|---|---|---|
| | Actual FY 1985 | Estimated FY 1986 | Estimated FY 1987 | Explanation of Major Changes |
| | $ | $ | $ | |
| Pennsylvania (Cont'd) | | | | |
| Aylesworth Creek Lake | 113,500 | 104,000 | 125,000 | Study land acquisition below spillway in FY 85; seismologic earthquake study in FY 87 |
| Beltzville Lake | 532,000 | 650,000 | 639,000 | Repair bridge piers and water quality wells in FY 86; repair water control valve and concrete drainage ditch in FY 87 |
| Blue Marsh Lake | 1,216,300 | 1,053,000 | 1,211,000 | Repair pressure water pipe in FY 85; erosion control and access road repair in FY 87 |
| Cowanesque Lake | 929,400 | 896,000 | 828,000 | Repair road surfaces and construct walkways in FY 85; periodic inspection and prepare flood emergency plan in FY 86 |
| Curwensville Lake | 491,100 | 379,000 | 335,000 | Pave access road and insulate shop building in FY 85; repair relief wells in FY 86 |

NORTH ATLANTIC DIVISION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

2. Flood Control (Cont'd)

a. Reservoirs (Cont'd)

| | OBLIGATIONS | | | |
|---|---|---|---|---|
| | Actual FY 1985 | Estimated FY 1986 | Estimated FY 1987 | Explanation of Major Changes |
| | $ | $ | $ | |
| Pennsylvania (Cont'd) | | | | |
| Foster Joseph Sayers Dam | 472,300 | 386,000 | 384,000 | Pave access road and insulate shop building in FY 85 |
| Francis E. Walter Dam | 434,200 | 458,000 | 508,000 | Prepare flood emergency plan in FY 86; repair access road and replace traffic signs in FY 87 |
| General Edgar Jadwin Dam and Reservoir | 249,900 | 365,000 | 159,000 | Prepare flood emergency plan in FY 85; replace stoplog system and debris removal in FY 86 |
| Prompton Lake | 364,900 | 336,000 | 259,000 | Prepare flood emergency plan in FY 85 and FY 86; seismic stability analysis in FY 85; install intake closure plates in FY 86 |

NORTH ATLANTIC DIVISION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

2. Flood Control (Cont'd)

a. Reservoirs

| | OBLIGATIONS | | | |
|---|---|---|---|---|
| | Actual FY 1985 | Estimated FY 1986 | Estimated FY 1987 | Explanation of Major Changes |
| | $ | $ | $ | |
| Pennsylvania (Cont'd) | | | | |
| Raystown Lake | 2,077,300 | 1,998,000 | 1,954,000 | |
| Stillwater Lake | 211,700 | 176,000 | 202,000 | Road repairs and revise reservoir regulation manual in FY 85; seismologic earthquake study in FY 87 |
| Tioga-Hammond Lakes | 1,540,300 | 1,342,000 | 1,351,000 | Road repairs and engineering and design for rehabilitation of bridge in FY 85; periodic inspection and commercial activity review in FY 87 |
| York Indian Rock Dam | 534,000 | 461,000 | 310,000 | Road repair and replace guard rails in FY 85; levee repair at Cordorus Creek in FY 86 |

NORTH ATLANTIC DIVISION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

2. Flood Control (Cont'd)

a. Reservoirs

OBLIGATIONS

| | Actual FY 1985 | Estimated FY 1986 | Estimated FY 1987 | Explanation of Major Changes |
|---|---|---|---|---|
| | $ | $ | $ | |
| Virginia | | | | |
| Gathright Dam and Lake Moomaw | 870,100 | 965,000 | 846,000 | Hydrologic data collection in FY 85 and FY 86 |
| Total - Scheduling Reservoir Operations | 126,000 | 84,000 | 87,000 | Revise reservoir regulation manuals in FY 85 |
| TOTAL RESERVOIRS | 12,827,600 | 12,271,000 | 11,459,000 | |

NORTH ATLANTIC DIVISION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

2. Flood Control (Cont'd)

b. Channel Improvement, Inspection and Miscellaneous Maintenance

The program request of $778,000 provides for the essential annual requirements of 2 local flood protection projects including 10 separate units of the southern New York projects, inspection of 73 completed projects, and inspection of completed PL 84-99 works during the budget year.

OBLIGATIONS

| | Actual FY 1985 | Estimated FY 1986 | Estimated FY 1987 | Explanation of Major Changes |
|---|---|---|---|---|
| | $ | $ | $ | |
| Southern New York F.C. Projects | 356,100 | 472,000 | 440,000 | Increased maintenance of levees and floodwalls in FY 86 and FY 87 |
| Cumberland, MD & Ridgeley, W. VA | 55,900 | 63,000 | 64,000 | Increased maintenance of levees and floodwalls in FY 86 and FY 87 |
| Inspection of Completed Works | 346,200 | 423,000 | 267,000 | Variation in inspection and report activities; flood emergency plans in FY 85 and FY 86 |

NORTH ATLANTIC DIVISION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

2. Flood Control (Cont'd)

b. Channel Improvement, Inspection and Miscellaneous Maintenance (Cont'd)

| | OBLIGATIONS | | | |
|---|---|---|---|---|
| | Actual FY 1985 | Estimated FY 1986 | Estimated FY 1987 | Explanation of Major Changes |
| | $ | $ | $ | |
| Inspection of Completed PL -99 Works | 1,100 | 6,000 | 7,000 | |
| Total - Channel Improvements, Inspections, & Miscellaneous Maintenance | 759,300 | 964,000 | [illegible]78,000 | |
| TOTAL - FLOOD CONTROL | 13,586,900 | 13,235,000 | 12,237,000 | |

### NEW YORK CITY WATER TUNNEL

Mr. **Bevill**. One project that you didn't mention is the water tunnel in New York. I haven't heard any report of that in years. I went up there once at the request of the local Congressman there in New York City and went down in the tunnel. Would you give us a report on that work?

General **Kavanaugh**. The results of the work we did in our water supply studies showed that the City is dedicated to the completion of the project, and that they are keeping it on schedule at a rate of $100 million annually. That is for stage 1 of City tunnel number 3, which is going right along. The City is committed to providing the financial resources and expects to have it on line in 1990. The entire project will take 30 years to complete.

Mr. **Bevill**. I am going to submit all my questions here for you to answer in the record.

General **Kavanaugh**. I will be happy to answer them.

[The questions and answers follow:]

### ELIZABETH RIVER, NY

Mr. **Bevill**. Describe the Elizabeth River and Tributaries, NJ, study, one of the new studies recommended in the FY 1987 budget.

General **Kavanaugh**. The Elizabeth River and Tributaries, NJ study will investigate the feasibility of providing flood protection measures in the Elizabeth basin upstream of an existing Federal project in Elizabeth, NJ. The Elizabeth River drains an area of 23 square miles and flows through a continuous band of urban development, including all or parts of the Townships of Irvington, Hillside and Union, and the Cities of Newark and Elizabeth. Irvington and Hillside have been identified as the two greatest problem areas with a combined damage potential of over $1,500,000 from floods of record. The reconnaissance phase, for which we are requesting FY 87 funds, will further define the problems and potential solutions; determine the local sponsors' willingness to participate financially in the Feasibility phase; provide an accurate estimate of time and cost for the Feasibility phase; and provide the basis to determine whether a Feasibility study should be undertaken.

### LEHIGH RIVER BASIN, PA

Mr. **Bevill**. In connection with the Lehigh River Basin, PA study, what factors led to the determination that hydropower is not feasible at Beltzville Lake and Penn Forest Reservoir?

General **Kavanaugh**. Hydropower development at Beltzville Lake was found to be economically unjustified. For Penn Forest Reservoir we found that a pumped storage hydropower project would be economically feasible. However, current policy is that Federal interest terminates when a determination is made that non-Federal development is practical and would provide National Economic Development benefits at least as great as would be provided by Federal development. We have therefore terminated our studies with the finding that a project is feasible but not in the Federal interest.

### CHESAPEAKE BAY SHORELINE EROSION

Mr. **Bevill**. What type of non-structural alternatives are being considered in connection with the Chesapeake Bay shoreline erosion study?

General **Kavanaugh**. At the initiation of the Chesapeake Bay shoreline erosion study we gave consideration to all structural and non-structural alternatives. Studies to date have reduced the alternatives to be pursued and only one non-structural solution currently shows promise. This alternative is vegetative stabilization which we are considering alone and in combination with structural measures.

### MAMARONECK AND SHELDRAKE RIVERS, NY

Mr. **Bevill**. I note the B-C ratio for the Mamaroneck and Sheldrake Rivers at Mamaroneck study is 1.1 to 1. What is the outlook—will the ratio remain above unity?

General **Kavanaugh**. The outlook for the Mamaroneck and Sheldrake Rivers project is that it shoud remain justified. The benefit-cost ratio is expected to remain above unity.

### ATLANTIC COAST OF MARYLAND AND ASSATEAGUE ISLAND, VA

Mr. **Bevill**. Outline the status of the Atlantic Coast of Maryland and Assateague Island, VA study.

General **Kavanaugh**. To date, $10,000 has been received for the preparation of a report on the economic feasibility of a single purpose hurricane project. This report has been submitted to our Washington office for review. Upon its approval, a work plan will then be prepared for the initiation of the General Design Memorandum studies for the hurricane protection project. The State of Maryland has indicated that it would construct the 165 foot beach width, thereby eliminating the need for the recreational portion of the Corps plan. Fiscal Year 1986 funds of $200,000 will be used for subsurface explorations, coastal and hydraulic work, environmental studies, and numerical modeling.

### HARRISBURG, PA

Mr. **Bevill**. Why have the benefits for the recommended plan involving Harrisburg, PA decreased, leading to a reformulation?

General **Kavanaugh**. Benefits have decreased because many of the industries have either relocated damageable goods to higher levels or have floodproofed themselves. Revised hydraulic studies have also caused a significant reduction in average annual damages. We are presently reformulating the project to identify the most feasible plan.

### LOCK HAVEN, PA

Mr. **Bevill**. As shown on page 25, the B–C ratio for the Lock Haven, PA project is presently 1.11 to 1. Will the B–C ratio remain above unity?

General **Kavanaugh**. Yes, Sir, it will. We expect the B–C ratio will improve when we incorporate the considerable construction savings now being evaluated into our project cost estimate. These construction savings stem from additional investigations which resulted in replacing proposed floodwalls with less costly levees.

### VIRGINIA BEACH, VA

Mr. **Bevill**. The FY 1985 Supplemental Act directed the Corps to initiate Continuation of Planning and Engineering for the Virginia Beach, VA project. What is the status of the study?

General **Kavanaugh**. Funds have been allotted for Continuation of Planning and Engineering Studies on the Virginia Beach project. The work plan has been initiated for preparation of the General Design Memorandum. During Fiscal Year 1986, work will also be accomplished on the geotechnical investigations, topographic surveys, and reevaluation of wave dynamics.

### SAW MILL RIVER AT ELMSFORD AND GREENBURGH, NY

Mr. **Bevill**. Why is the authorized plan for the Saw Mill River at Elmsford and Greenburgh, NY project no longer economically justified?

General **Kavanaugh**. Benefits were reduced significantly by the elimination of future commercial and industrial damages that are now prohibited by Corps' policy. Further, increases in annual costs, due to both a higher interest rate and new project cost estimates, were greater than the increase in benefits. These changes result in the authorized project being no longer justified.

### PROMPTON LAKE, PA

Mr. **Bevill**. The FY 1986 Energy and Water Development Appropriation Act contains $400,000 to conduct dam safety analysis of the Prompton Lake, PA, project. What is the status of the work and what is planned in FY 1987?

General **Kavanaugh**. The initial FY 1986 effort will be to conduct an independent dam safety analysis. An architect-engineering firm has been selected for this work and contract negotiations are presently underway. It is expected that the contract will be awarded in March 1986 and completed by the end of Fiscal Year 1986. The balance of FY 1986 funding will be used to study the project's flood control capacity and benefits, reevaluate the feasibility of the modification, prepare a plan of

NORTH ATLANTIC DIVISION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

3. Multiple Purpose Power Projects - None

4. Protection of Navigation

The program request of $13,358,000 provides for accomplishing the work essential to the administration and enforcement of specific laws enacted for the protection of navigation, including the prevention of obstructive and injurious deposits in the tidal waters of 3 major harbors; general regulatory functions (Section 10, River and Harbor Act, 1899; Section 402 and 404 of FWPCA Amendment of 1972; Section 103 of Marine Protection Research and Sanctuary Act of 1972) involving the issuance and review of permits for discharges into navigable water; removal of drift and debris and project conditions surveys.

OBLIGATIONS

| | Actual FY 1985 | Estimated FY 1986 | Estimated FY 1987 | Explanation of Major Changes |
|---|---|---|---|---|
| | $ | $ | $ | |
| Prevention of Obstructive Deposits | 863,700 | 891,000 | 948,000 | Variation in operational requirements |
| New York Harbor | (564,900) | (540,000) | (569,000) | |
| Baltimore Harbor | ( 51,000) | ( 81,000) | ( 85,000) | |
| Norfolk Harbor | (247,800) | (270,000) | (294,000) | |
| General Regulatory Functions | 7,221,500 | 7,422,000 | 6,693,000 | |

NORTH ATLANTIC DIVISION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

4. Protection of Navigation (Cont´d)

| | OBLIGATIONS | | | |
|---|---|---|---|---|
| | Actual FY 1985 | Estimated FY 1986 | Estimated FY 1987 | Explanation of Major Changes |
| | $ | $ | $ | |
| Drift Removal | 3,573,100 | 3,689,000 | 3,730,000 | |
| New York Harbor | (2,798,200) | (2,785,000) | (2,845,000) | |
| Baltimore Harbor | ( 202,300) | ( 228,000) | ( 225,000) | |
| Hampton Roads, Norfolk & Newport News Harbor | ( 178,200) | ( 190,000) | ( 190,000) | |
| Potomac & Anacostia Rivers Drift Removal, Washington Metropolitan Area | ( 394,400) | ( 486,000) | ( 470,000) | |
| Project Condition Survey | 1,722,700 | 1,965,000 | 1,987,000 | |
| TOTAL - PROTECTION OF NAVIGATION | 13,381,000 | 13,967,000 | 13,358,000 | |
| GRAND TOTAL - NORTH ATLANTIC DIVISION | 132,454,600 | 125,000,000 | 147,476,000 | |

APPROPRIATION TITLE: Operation and Maintenance, General Major Rehabilitation - Channels and Harbors (Navigation)

PROJECT: Inland Waterway, Delaware River to Chesapeake Bay, Delaware & Maryland - C&D Canal Bridges (St. Georges Bridge & Summit Bridge)(New)

LOCATION: The Chesapeake and Delaware Canal is part of the Inland Waterway which connects the Delaware River with the Chesapeake Bay. The Canal is crossed by four high level fixed highway bridges and a railroad bridge lift span. The Summit Bridge, which carries Delaware State Route 896 over the Chesapeake and Delaware Canal at Summit, Delaware, is a fixed, high-level, four-lane highway structure constructed in 1957-59. The St. Georges Bridge, which carries U.S.Route 13 over the Chesapeake and Delaware Canal at St. Georges, Delaware is a fixed, high-level, four-lane highway structure constructed in 1940-41.

AUTHORIZATION: The Chesapeake and Delaware Canal was authorized by the River and Harbor Act of March 2, 1919 and modified by the River and Harbor Acts of January 21, 1926, July 3, 1935, August 7, 1939 and September 3, 1954. The construction of the St. Georges Bridge was authorized by the River and Harbor Act of August 7, 1939, while the Summit Bridge construction was authorized by the September 1954 Act.

BENEFIT-COST RATIO: The remaining benefit-remaining cost ratio is not applicable because monetary benefits have not been quantified.

| SUMMARIZED FINANCIAL DATA | | | Accum. % of Est. Fed Cost |
|---|---|---|---|
| Estimated Federal Cost | | $26,700,000 | |
| Estimated Non-Federal Cost | | 0 | |
| Cash contributions | 0 | | |
| Other | 0 | | |
| Total Estimated Project Cost | | $26,700,000 1/ | |
| Allocations to 30 September 1985 | | 0 | |
| Conference Allowance for FY 1986 | | 0 | |
| Allocation for FY 1986 | | 0 | |
| Allocations to Date | | 0 | |
| Allocation Requested for FY 1987 | | 7,750,000 | |
| Scheduled Balance to Complete after FY 1987 | | 18,950,000 | |
| Unscheduled Balance to Complete after FY 1987 | | | |

1/ Summit Cost($10,590,000); St. Georges Cost($16,110,000)

| STATUS: (1 Jan 1986) | PERCENT COMPLETE | COMPLETION SCHEDULE |
|---|---|---|
| Summit Bridge | 0 | September 1988 |
| St. Georges Bridge | 0 | September 1990 |
| Entire Project | 0 | September 1990 |

PHYSICAL DATA

Summit Bridge: Total length is 2058 with a roadway width of 57 feet with two 2-foot walkways at roadway grade.

St. Georges Bridge: Total length is 4209 feet with a roadway width of 52 feet

The work consists of removing the worn concrete deck, strengthening the supporting steel members to carry modern traffic loadings without being overstressed, removing steel railing between abutments, and placing a new reinforced deck with modern traffic protection median barrier and parapets.

DIVISION: North Atlantic DISTRICT: Philadelphia REGION: Middle Atlantic

IWW, Delaware River to Chesapeake
Bay, DE&MD-C&D Canal Bridges

JUSTIFICATION: At present, the Summit Bridge deck has areas of severe cracking with moisture penetration and leaching. The deck slab in the outside traffic lane is moving vertically relative to the stringer top flanges. Water seeping through cracks and joints has resulted in structural steel cross section loss at several locations on the superstructure. Summit Bridge carries an annual average daily traffic (AADT) volume of 14,024 vehicles (1985 figures)
At present, the St. Georges Bridge deck is worn with map cracking, exposed polished aggregate, and exposed reinforcing bars. Water seeping through cracks and joints is causing deterioration and rusting of stay-in-place deck forms and supporting structural steel. Because St. Georges Bridge carries U.S. Route 13 which is the main link uniting the economy of the Delmarva Peninsula, it is unrealistic to consider imposing permanent weight restrictions on the bridge which differ from modern interstate standards. In the absence of posted weight restrictions on the bridge, it is estimated that yearly maintenance costs will increase as the rate of slab deterioration increases. The bridge carries an Annual Average Daily Traffic (AADT) volume of 24,340 vehicles.

FISCAL YEAR 1987: The requested funding will be used to:

| | |
|---|---|
| a. Complete design memorandum and begin plans and specifications for St. Georges Bridge Rehabilitation. | $180,000 |
| b. Summit Bridge Rehabilitation Work | |
| S&A During Construction | 550,000 |
| E&D During Construction | 115,000 |
| FY 1987 Contract Work | 6,905,000 |
| Total for FY 1987 | $7,750,000 |

NON-FEDERAL COST: The Summit Bridge and St. Georges Bridge are owned and operated by the United States Government. No local financing and cost sharing are involved in this Major Rehabilitation Project.

STATUS OF LOCAL COOPERATION: N/A

COMPARISON OF FEDERAL COST ESTIMATE: This is the first submission of a cost estimate to Congress for this project.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT (EIS) AND COMPLIANCE WITH CLEAN WATER ACT: A final EIS for the Inland Waterway, Delaware River to Chesapeake Bay, was filed with the Council on Environmental Quality on 29 April 1974. An appendix to the final EIS was filed on 11 Oct 1974. The impact of the proposed work will be addressed in an Environmental Assessment which will be prepared during the Design Memorandum phase of St. Georges and the Plans and Specifications phase of Summit. Section 404 of the Clean Water Act is not applicable because the project does not involve the placement of fill material or discharge of dredged material into the waters of the United States.

OTHER INFORMATION: None

HISTORICAL CHANGES IN BASE LINE FEDERAL COST ESTIMATE

**DIVISION:** North Atlantic
**DISTRICT:** Philadelphia

**Project:** IWW,Delaware River to Chesapeake Bay, DE & MD
C&D Canal Bridges (Major Rehabilitation)

| | Estimates Presented to Congress ($1,000) | | | | |
|---|---|---|---|---|---|
| ITEM | Original Baseline | Cummulative Changes | Last | Incremental Change | Current |
| Federal Cost | 26,700 | 0 | N/A 1/ | 0 | 26,700 |
| (Price Level) | (Oct 85) | | | | (Oct 85) |
| Reason for Change | | | | | |
| a. Price Escalation | | | | | |
| b. Design Changes | | | | | |
| c. Additional Function Added Under General Authorization | | | | | |
| d. Authorized Modification | | | | | |
| e. Post-Contract Award and Other Estimating Adjustments | | | | | |
| f. Schedule Changes | | | | | |
| g. Sundry | | | | | |
| h. Real Estate | | | | | |

1/ This is the first submission of a cost estimate to Congress for this project.

REPORTS CONTROL SYMBOL: DAEN-CWB-13

| | | | |
|---|---|---|---|
| APPROPRIATION TITLE: OPERATION AND MAINTENANCE | | CLASSIFICATION: MAJOR REHABILITATION | |

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 1986 AND 1987

| LINE NO | ITEM<br>(a) | PROJECT COST ESTIMATE<br>(b) | TOTAL TO 30 SEP 1985<br>(c) | CURRENT FY 1986<br>(d) | BUDGET FY 1987<br>(e) | BALANCE TO COMPLETE AFTER FY 1987<br>(f) |
|---|---|---|---|---|---|---|
| 1 | ROADS AND BRIDGES | 24,145,000 | 0 | 0 | 6,905,000 | 17,240,000 |
| 2 | ENGINEERING AND DESIGN | 630,000 | 0 | 0 | 255,000 | 375,000 |
| 3 | SUPERVISION AND ADMINISTRATION | 1,925,000 | 0 | 0 | 590,000 | 1,335,000 |
| 4 | | | | | | |
| 5 | TOTAL FEDERAL AND NON-FEDERAL COSTS | 26,700,000 | 0 | 0 | 7,750,000 | 18,950,000 |
| 6 | UNDISTRIBUTED COSTS - NONE | | | | | |
| 7 | TOTAL PROJECT COSTS | 26,700,000 | 0 | 0 | 7,750,000 | 18,950,000 |
| 8 | PENDING ADJUSTMENTS - NONE | | | | | |
| 9 | TOTAL COSTS | 26,700,000 | 0 | 0 | 7,750,000 | 18,950,000 |
| 10 | UNDELIVERED ORDERS - NONE | | | | | |
| 11 | TOTAL OBLIGATIONS | | 0 | 0 | 7,750,000 | 18,950,000 |
| 12 | | | | | | |
| 13 | | | | | | |
| 14 | | | | | | |
| 15 | | | | | | |
| 16 | METHOD OF FINANCING | | | | | |
| 17 | FEDERAL FUNDS | 26,700,000 | | | | |
| 18 | ALLOCATIONS | | 0 | 0 | | |
| 19 | UNOBLIGATED CARRYOVER - PRIOR YEAR | | 0 | 0 | 0 | 0 |
| 20 | APPROPRIATION REQUIRED | | | 0 | 7,750,000 | 18,950,000 |
| 21 | | | | | | |
| 22 | | | | | | |
| 23 | | | | | | |
| 24 | | | | | | |
| 25 | | | | | | |
| 26 | | | | | | |
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| 29 | | | | | | |
| 30 | | | | | | |
| 31 | | | | | | |
| 32 | | | | | | |
| 33 | | | | | | |

| | | | |
|---|---|---|---|
| EFFECTIVE DATE<br>JANUARY 1986 | DIVISION NORTH ATLANTIC<br>DISTRICT PHILADELPHIA | REGION MIDDLE ATLANTIC<br>BASIN DELAWARE RIVER | PROJECT INLAND WATERWAY, DELAWARE RIVER TO CHESAPEAKE BAY, DE&MD-CHESAPEAKE & DELAWARE CANAL BRIDGES(MAJ. REHAB.) |

ENG FORM 1 SEP 74 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE.

action for advanced engineering and design and obtain mapping of the project area. In FY 1987, advanced engineering and design will continue including hydraulic, hydrological and geotechnical investigations and economic and environmental studies. In addition, public involvement and agency coordination will continue.

### DELAWARE RIVER IN THE VICINITY OF CAMDEN, NJ

Mr. **Bevill**. Describe the Delaware River in the vicinity of Camden, NJ, project which has been recommended for initiation in the FY 1987 budget.

General **Kavanaugh**. The project consists of dredging, from 30 feet to 37 feet deep, a trapezoidal shaped access channel to Piers, 1, 2, 3, and 4 of the Becket Street Terminal in Camden, NJ, from the existing 37 foot deep Federal ship channel in the Delaware River. The total project cost is estimated to be $4,765,000.

### FRANCIS E. WALTER DAM, PA

Mr. **Bevill**. Describe the Francis E. Walter, PA, project which has been recommended for initiation in the FY 1987 budget.

General **Kavanaugh**. The modification of the existing Francis E. Walter Dam involves raising the existing dam by 30 feet to provide additional storage capacity for water supply. Included, as a result of the raising of the dam, will be construction of a new spillway, intake tower, recreation facilities, and relocations.

Mr. **Bevill**. How is it possible to reduce the Federal cost of the Francis E. Walter, PA, project by $98.6 million since last year?

General **Kavanaugh**. The decrease of $98.6 million reflects the willingness of the Delaware River Basin Commission, the local sponsor, to accelerate payment of its share of project costs during the construction period.

### BALTIMORE HARBOR AND CHANNELS, MD

Mr. **Bevill**. In connection with the Baltimore Harbor and Channels, MD (1958 Modification) project, the conference report accompanying the FY 1986 Energy and Water Development Appropriation Bill stated that expenditure of the $2.5 million contained in the bill for the project is subject to a favorable decision by the Chief of Engineers on a new report. What did the Chief of Engineers recommend?

General **Kavanaugh**. I recently submitted my report on this project to the Chief of Engineers and it is now under review in his office. The Chief of Engineers has not yet made a decision on this report.

### BALTIMORE HARBOR AND CHANNELS, MD AND VA

Mr. **Bevill**. I note that $54 million has been requested for the Baltimore Harbor and Channels, MD & VA project. Have the local sponsors signed a binding cost sharing agreement?

General **Kavanaugh**. No, sir. The State has reviewed our draft agreement and has provided their comments. We expect to execute the final local cooperation agreement this spring.

Mr. **Bevill**. Describe the plan to dredge the 50-foot project to less than the authorized channel widths.

General **Kavanaugh**. Sir, in Virginia, we plan to dredge the Cape Henry Channel to its authorized 1,000 foot width, while dredging the York Spit and Rappahannock Shoal Channels to 800 feet of their authorized 1,000 foot widths. In Maryland, we will dredge the main ship channels to 700 feet of the authorized 800 foot widths, the Curtis Bay Channel to 400 feet of the authorized 600 foot width, and the Northwest Branch Channels to their full 600 foot width. Dredging the project to these less than authorized channel widths initially will allow for reducing initial construction cost while realizing a substantial portion of the project benefits.

### NEW YORK HARBOR COLLECTION AND REMOVAL OF DRIFT, NY AND NJ

Mr. **Bevill**. You indicate a cost increase of $730,000 with regard to the NY Harbor Collection and Removal of Drift project because of a monitoring program for an EPA permit. Is this program a new requirement?

General **Kavanaugh**. Yes Sir, it is. The EPA required that test burns be performed on selected material and that on-site monitoring of the air quality take place during the test burn. The results of the monitoring program will become part of the Corps application for a new EPA burn permit. The EPA burn permit under which we were operating expired in October 1984. EPA extended the permit and then issued a one-year interim burn permit in May 1985. Issuance of a new permit is dependent upon the results of the air and water monitoring program currently underway.

Mr. **Bevill**. What is the total cost for the monitoring program?

General **Kavanaugh**. The total cost for the monitoring program is now estimated to be $1,100,000.

### NORFOLK HARBOR AND CHANNELS (DEEPENING), VA

Mr. **Bevill**. What are the design changes which enable you to show a cost decrease of $95.9 million in the cost of the Norfolk Harbor and Channels (Deepening), VA project?

General **Kavanaugh**. The Atlantic Ocean Channel would be aligned to take advantage of the deepest water available, the width of the Norfolk Harbor Channel would be reduced to 1,000 feet in areas now 1,500 feet wide, the proposed Fixed Mooring Anchorage Areas would be replaced by a new 1,500 foot radius anchorage 55 feet deep, and the existing Sewells Point Anchorage Area would be increased from 1,200 feet to 1,500 feet radius. In addition, the supplemental protection for the Thimble Shoal Channel Tunnel would be a rock blanket instead of reinforced concrete. Dredged material from Hampton Roads would be deposited in Craney Island Disposal Area instead of the Atlantic Ocean, and dredged material from the Thimble Shoal and Atlantic Ocean channels would be deposited in the Dam Neck Ocean Disposal Site, instead of the Norfolk Ocean Disposal Site. All these changes have resulted in a $95.9 million cost decrease.

### ARDSLEY, NY

Mr. **Bevill**. On page 108, in regard to the Ardsley, NY project, you show a potential FY 1986 allocation of $75,000 "based on current project schedule." Would you explain?

General **Kavanaugh**. The Ardsley project was among those included in the FY 1985 Supplemental Appropriations Act. There was no amount specifically allocated by the Conference Report for the project and the $75,000 is the total amount that can be effectively used in FY 1986.

### TIOGA HAMMOND LAKES, PA

Mr. **Bevill**. Public Law 99-88 appropriated $7.5 million for the Mill Creek recreation area at the Tioga-Hammond Lakes project in Pennsylvania. What is the status of the work at Mill Creek?

General **Kavanaugh**. In coordination with Mansfield University, we have developed a joint plan for the Mill Creek area that defines those facilities to be financed and constructed by the Corps and those specialized facilities for the handicapped that will be financed and constructed by Tioga County. The County is acting as the local sponsor on behalf of Mansfield University. We expect to execute a lease agreement with Tioga County this fall. Our schedule is to complete final design for the Corps facilities one month after a lease agreement is executed, and begin construction of the Corps facilities about two months later. Once underway, the Corps facilities can be constructed within two years.

### BINGHAMTON, NY

Mr. **Bevill**. The regular FY 1986 Energy and Water Development Appropriation Bill appropriated $400,000 for correction of project deficiencies in the First Ward Area Front Street Levee in Binghamton, NY. What is the status of that work?

General **Kavanaugh**. Presently, final design is underway and will be completed in May 1986. Once local interests acquire the necessary real estate right-of-way we will award the construction contract and complete it in about 3 months.

### SANDY HOOK TO BARNEGAT INLET, NJ

Mr. **Bevill**. The regular FY 1986 Energy and Water Development Appropriation Act appropriated $1.5 million for the Sandy Hook to Barnegat Inlet, NJ project. What is the status of that project?

General **Kavanaugh**. The $1.5 million provided are being used to continue engineering and design on the Seabright to Ocean Township portion of the project. We are performing average annual damage calculations, conducting cultural reconnaissance studies, and will initiate preparation of the draft.

### FIRE ISLAND INLET, NY

Mr. BEVILL. Our colleague, Congressman Tom Downey, is interested in dredging Fire Island Inlet. What is the current status of this work and what is planned in FY 1987?

General KAVANAUGH. In 1985, as an interim solution to maintaining the channel at Fire Island Inlet, a 16 foot deep by 450 foot wide entrance channel was dredged, removing shoals to provide for a safer navigation approach during rough weather. At current estimated shoaling rates, a similar dredging effort will be required by 1987 to maintain the entrance channel and funds are budgeted for this work. A study of the long term solution to the navigation problems at Fire Island Inlet is now underway. This study is expected to be completed by the end of 1987.

### NEW YORK HARBOR

Mr. BEVILL. What accounts for the sizable increase of $3.4 million for dredging New York Harbor compared with FY 1986?

General KAVANAUGH. Our FY 1987 requirements for New York Harbor anticipate the dredging of 800,000 cubic yards form Ambrose Channel and Sandy Hook Channel at a cost of over $4 million. Dredged material management studies to monitor and support a dredging program will add an additional $1.8 million. Our FY 1985 and 1986 requirements were reduced by sand mining in Ambrose Channel by private industry at no cost to the Federal Government. FY 1987 expenditures may also be significantly lower if sand mining by private industry were to continue.

### SCHUYLKILL RIVER, PA

Mr. BEVILL. There is another large fluctation of almost $3 million between FY 1986 and FY 1987 in the dredging costs on the Schuylkill River, PA. Would you comment?

General KAVANAUGH. The Schuylkill River requires maintenance on an approximate 2-year cycle. A $3 million contract effort to remove approximately 1 million cubic yards of material is scheduled to be awarded late in FY 1986 with FY 1987 earnings of $2.9 million. This work will be in both the 33 foot and 26 foot channels.

### CHESAPEAKE AND DELAWARE CANAL BRIDGES

Mr. BEVILL. Describe the major rehabilitation of the Chesapeake and Delaware Canal Bridges which is budgeted in FY 1987.

General KAVANAUGH. The rehabilitation work for the Summit and St. Georges Bridges consists of removing the existing deteriorated concrete decks and replacing them with new concrete decks with modern traffic protection medians and parapets, removing steel railings between abutments, replacing the St. Georges Bridge fence, and providing selective strengthening of the steel superstructure as may be required to meet present day load carrying requirements.

Mr. BEVILL. What is the urgency of doing this work at this time?

General KAVANAUGH. Both bridges are major traffic arteries in the area, especially St. Georges Bridge, which carries U.S. 13, the main traffic link in the Delmarva Peninsula. In the absence of posted weight restrictions on the bridges, it is estimated that yearly maintenance costs will continue to increase as the rate of slab deterioration increases. Continued deterioration of the structural metal work will adversely affect the load carrying capacity of the structures.

### DISMAL SWAMP CANAL

Mr. BEVILL. The Congress provided an additional $340,000 in FY 1986 for the Dismal Swamp Canal. How were those funds utilized?

General KAVANAUGH. In FY 1986, the $340,000 provided for the Dismal Swamp Canal covered increased costs over the caretaker status the project had been in. This amount will provide for lock and bridge operations, and maintenance of locks, bridges, roads, and permanent operating equipment.

Mr. BEVILL. The chair recognizes Mr. Myers.

Mr. MYERS. Thank you, Mr. Chairman.

I, too, have some questions for the record. General, we welcome your wife again. It is always nice to see the good-looking side of the family.

Mr. **Bevill**. You can see it really pays to bring Marjorie with you.

### MAJOR PORTS

Mr. **Myers**. In your area, you probably have more ports than any other division, don't you?

General **Kavanaugh**. We have four major ports.

Mr. **Myers**. Do you have any statistics as to tonnage in the years you have been there as Division Chief? Has there been any trend?

General **Kavanaugh**. Since I arrived, Norfolk has had a slight downtrend in foreign commerce while the other ports have been going up. When you look at Norfolk, you have to break commerce into two groups; coal and everything else. Coal has decreased and has brought the foreign commerce total down.

Mr. **Myers**. Well, for the record would you include the tonnage figures for the last ten years?

General **Kavanaugh**. Yes, sir. I have a table and the easiest thing for me to do is include that table.

Mr. **Bevill**. Without objection, so ordered.

[The information follows:]

The following table shows that for the latest 10 year period for which we have total tonnage figures (1974-1983) commerce has decreased in all four ports. Foreign tonnage, which is more representative of deep draft commerce, has also decreased. The decrease in the ten year period is magnified by the 1974 figures being generally the highest through 1979.

NORTH ATLANTIC DIVISION PORTS
FOREIGN AND TOTAL COMMERCE
(MILLION SHORT TONS)

| | NEW YORK | | PHILADELPHIA | |
|---|---|---|---|---|
| Year | Total | Foreign | Total | Foreign |
| 1985 | NA | 56.7 est | NA | 60.0 est |
| 1984 | NA | 60.3 (2) | NA | 59.0 (3) |
| 1983 | 147.3 (1) | 49.0 (2) | 91.0 (1) | 53.9 (1) |
| 1982 | 149.3 (1) | 43.8 (1) | 98.3 (1) | 58.0 (1) |
| 1981 | 156.6 (1) | 48.2 (1) | 111.9 (1) | 66.1 (1) |
| 1980 | 167.0 (1) | 50.2 (1) | 119.3 (1) | 70.4 (1) |
| 1979 | 163.6 (1) | 56.2 (1) | 140.5 (1) | 80.4 (1) |
| 1978 | 186.7 (1) | 62.0 (1) | 132.4 (1) | 75.8 (1) |
| 1977 | 185.3 (1) | 66.6 (1) | 133.3 (1) | 76.8 (1) |
| 1976 | 179.6 (1) | 59.5 (1) | 133.7 (1) | 77.1 (1) |
| 1975 | 177.8 (1) | 55.7 (1) | 131.8 (1) | 76.6 (1) |
| 1974 | 185.1 (1) | 66.5 (1) | 143.7 (1) | 80.9 (1) |

| | BALTIMORE | | HAMPTON ROADS | |
|---|---|---|---|---|
| Year | Total | Foreign | Total | Foreign |
| 1985 | NA | 27.2 est | NA | 45.1 est |
| 1984 | NA | 25.0 (4) | NA | 49.2 (5) |
| 1983 | 31.5 (1) | 21.6 (4) | 62.1 (1) | 46.3 (1) |
| 1982 | 40.8 (1) | 30.5 (1) | 80.4 (1) | 66.5 (1) |
| 1981 | 49.8 (1) | 33.9 (1) | 75.6 (1) | 61.2 (1) |
| 1980 | 50.0 (1) | 36.1 (1) | 80.4 (1) | 62.1 (1) |
| 1979 | 51.4 (1) | 37.6 (1) | 65.7 (1) | 47.9 (1) |
| 1978 | 46.8 (1) | 31.8 (1) | 49.4 (1) | 29.2 (1) |
| 1977 | 44.8 (1) | 28.1 (1) | 57.1 (1) | 39.3 (1) |
| 1976 | 52.4 (1) | 33.0 (1) | 68.0 (1) | 47.9 (1) |
| 1975 | 52.7 (1) | 34.5 (1) | 71.5 (1) | 51.3 (1) |
| 1974 | 59.9 (1) | 38.1 (1) | 79.0 (1) | 54.3 (1) |

Notes - Data Sources

NA - Data is not available
(1) - Water Commerce Statistics Center
(2) - Port Authority of New York and New Jersey
(3) - Delaware River Port Authority
(4) - Maryland Port Authority
(5) - Preliminary estimate from Waterborne Commerce Statistics Center

### BALTIMORE HARBOR AND CHANNELS, MD/VA

Mr. MYERS. The other thing I am concerned about is the tunnel in the Baltimore Harbor. The tunnel is less than 55 feet, isn't it? Where you have the tunnel, you have less than 55-foot clearance. Is there some problem there with the tunnel they are putting under the harbor?

General KAVANAUGH. The new tunnel is operational. We will not have a problem going to full channel depth. There still will be adequate depth for protection of the tunnel. As you know, oftentimes rock is used as additional protection over tunnels, but we are all right here.

Mr. MYERS. I am not so worried about the tunnel as I am about the reduction of shipping over that hump. What is the clearance going to be?

General KAVANAUGH. It is such that when we construct our 49 foot channel authorized for the eastern part of the Northwest Branch there is still sufficient clearance so that the tunnel will not restrict the depth required for shipping.

Mr. MYERS. Thank you.

### NORFOLK HARBOR DEEPENING, VA

General KAVANAUGH. The tunnel we have to be careful of is the Norfolk Tunnel to Cape Charles but our design allows for that. The one up in Baltimore is all right.

Mr. MYERS. Thank you very much for your testimony.

General KAVANAUGH. Yes, sir.

Mr. MYERS. A very fine presentation. Thank you, Mr. Chairman.

### MAJOR PORTS

Mr. BEVILL. General, you have four major ports in the country that are in need of dredging. Of course, I guess all of them are in need of dredging, but I mean the major ports, you have Baltimore, New York and New Jersey, Philadelphia and Norfolk. That is a very important role you are playing. I understand that something like 35 percent of the big freighters cannot even get into United States ports because they are not deep enough.

Have you ever heard that statistic?

General KAVANAUGH. I can only give the statistics as they pertain to the ports I have. One of the major problems in New York Harbor and the other ports is the fact that the ships inbound have to off-load, which causes double handling charges, and slower turnaround time. That is a significant cost for shippers in the ports. The alternative of not fully loading the vessels is also costly and is the major problem in Norfolk Harbor.

Mr. BEVILL. It makes it less competitive in the world market.

General KAVANAUGH. Yes, sir.

Mr. BEVILL. I think it is very critical that we get these ports dredged to a depth in order that we can compete in foreign markets.

General KAVANAUGH. Yes, sir.

### COAL EXPORTS

Mr. **Myers**. If you will yield, you come from a coal-producing area. Two or three years ago, we met with the Minister of Commerce in Italy. We asked him about coal. They produce some coal, but they buy a lot of coal. We asked: "why don't you buy more U.S. coal?" He said "We would like to, but it is too expensive." We asked why it was too expensive, "Can't we be competitive?" He said, "It is the cost of shipping. We can go into other ports, we can't get in there. If we have a collier half full, it doesn't make it economically feasible to buy from the United States." If we just had deeper ports, we could do that.

That is one of the reasons why you say the coal tonnage is dropping off. It is just the fact that we can't get the ships fully loaded.

General **Kavanaugh**. Yes, sir. The handling facilities down at Norfolk and other ports greatly exceed the capacity of ships that can use the channels.

Mr. **Myers**. They don't have 55-foot——

General **Kavanaugh**. We do not have a 55 foot channel in my Division area.

Mr. **Myers**. Baltimore at this point doesn't either.

General **Kavanaugh**. That is right, sir.

Mr. **Myers**. Is there a coal port that you know of that goes to 55 feet?

General **Kavanaugh**. I don't have one. I don't know about the rest of the country.

Mr. **Myers**. We wonder why we are losing the coal business—we can't get it out of the country.

I have some additional questions for the record.

[The questions and answers follow:]

### RICHMOND, VA

Mr. **Myers**. How soon can you finish the Richmond Floodwall once construction starts?

General **Kavanaugh**. Construction of the Richmond project can be completed in 4 years once construction starts.

Mr. **Myers**. What is your capability in 1987 for the Richmond project?

General **Kavanaugh**. Our capability in FY 1987 is $1,200,000 which is the same as the budget amount.

Mr. **Myers**. Could accelerated funding accelerate completion?

General **Kavanaugh**. The budget amount represents our capability for FY 1987. Design of the project is scheduled for completion in FY 1987, after which our funding requirements beyond FY 1987 will become better known.

Mr. **Bevill**. We will place the following letter from Representative Bentley in the record at this point.

[The letter follows:]

HELEN DELICH BENTLEY
2D DISTRICT, MARYLAND

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House of Representatives
Washington, DC 20515

COMMITTEE ON
PUBLIC WORKS AND
TRANSPORTATION
SUBCOMMITTEES
WATER RESOURCES
ECONOMIC DEVELOPMENT

COMMITTEE ON
MERCHANT MARINE
AND FISHERIES
SUBCOMMITTEES:
MERCHANT MARINE
PANAMA CANAL/OUTER
CONTINENTAL SHELF
OVERSIGHT AND INVESTIGATIONS
SELECT COMMITTEE ON AGING
SUBCOMMITTEE ON RETIREMENT
INCOME AND EMPLOYMENT
TASK FORCE ON WOMEN
AND SOCIAL SECURITY

February 25, 1986

Chairman Tom Bevill
Subcommittee on Energy and Water Development
Room 2362 Rayburn HOB
Washington. D.C. 20515

Dear Mr. Chairman:

As the Corps of Engineers completes its FY 1987 Budget presentation to the Subcommittee, I would request that you keep in mind three important dredging projects for the Port of Baltimore:

50' CHANNEL PROJECT- Authorized since 1970, this long-delayed deepening work will be finally initiated in 1986, due to the provisions of PL 99-88, the FY 1985 Supplemental Appropriations Act. It is my understanding that after the initial start-up expenditures of \$15-\$18m appropriated under that Act are expended, the Corps has Requested approximately \$54m to complete the next major phase for the project, which will be constructed under the terms of a cost-sharing agreement now in the final stages of negotiations between the Corps and the State of Maryland, or under the terms of the major water project legislation awaiting final Congressional action. Your past recognition of this vital harbor improvement is well known in Baltimore and your continued support is deeply appreciated.

BREWERTON CHANNEL- This vital connecting channel from the port's terminals to the C&D Canal received \$2.5m under the terms of PL 99-141, the FY 1986 Water Resources Act and it is my understanding that the Corps has requested \$5m for FY 1987---the combined totals accounting for just more than 25% of the estimated \$28m cost, which is fully federal funded since the authorized depth of 35' was never achieved since Congressional approval in 1958. Maximum support from the Subcommittee is requested to keep this important work on schedule, since timely appropriations save both construction and ultimately vessel operating costs.

C&D CANAL- This connecting channel was authorized at 35', but due to rapid silting has never achieved that operating depth. The Canal provides a continuous sea level between the port and the Delaware River, and ocean access to the north. This route saves vessels six hours and 150 miles on vessel call stops from New York to Baltimore, a vital factor since it costs between $25,000 and $50,000 daily to operate a cargo ship. During 1985 the State of Maryland at its own cost undertook a substantive survey of the Canal and its current problems and future needs. While a summary of this report is attached for the Subcommittee's review, its most important findng was to seek $26m to achieve the 35' authorized depth, which will require advanced maintenance dredging to 37'. This $26m will be a one time cost, with an estimated annual maintenance cost of $4m---actually less than the current $6m range Corps requests, which are not achieving the Canal's fullest potential as intended by the Congress. All parties in the port---pilots, Corps officials, vessels owners, state and governments worked on this important report and I urge the Subcommittee to give its findings the highest consideration. The $26m required will will service 93% of the Baltimore-Philadelphia traffic and 71% of the New York- Baltimore vessel movements. These figures alone justify moving forward with this work in FY 1987.

Thanking you and the Subcommittee for your recognition of Maryland's vital maritime role for our nation's economy. I remain,

Sincerely,

Helen Delich Bentley

Helen Delich Bentely
Member of Congress

HDB:sw

cc: John T. Myers, M.C.
(ranking minority member)

Mr. **Bevill**. General, thank you very much for a very fine presentation.

TUESDAY, FEBRUARY 25, 1986.

## NEW ENGLAND DIVISION

### WITNESSES

**COL. THOMAS A. RHEN, DIVISION ENGINEER**
**WILLIAM C. SCULLY, CHIEF, PROGRAMS OFFICE**
**ROBERT H. BYRNE, JR., PROGRAMS OFFICE**

### INTRODUCTION

Mr. BEVILL. We will next take up the New England Division. Colonel Rhen, we are pleased to have you. This is your first appearance before this committee. As is customary, when you have an opportunity, we would like to get a biographical sketch on you for the record.

Colonel RHEN. All right, sir.

[The biographical sketch follows:]

### COL. THOMAS A. RHEN, CORPS OF ENGINEERS, COMMANDER AND DIVISION ENGINEER, NEW ENGLAND DIVISION

Colonel Thomas A. Rhen assumed command of the New England Division, U.S. Army Corps of Engineers, on 28 August 1985.

In managing the Corps' responsibilities in the six New England states, Colonel Rhen supervises a workforce of over 500 and an annual budget of approximately $90 million.

Current Corps water resource programs in the region deal primarily with flood control; navigation; water supply; hydroelectric power generation; operation and maintenance of completed projects, including the Cape Cod Canal; and the regulation of activities affecting waters and wetlands. The Division, headquartered in Waltham, Massachusetts, is also involved in hurricane protection and studies concerning water supply, water quality, dredge material disposal, low flow augmentation, and comprehensive studies of New England river basins.

The New England Division provides engineering support services to military facilities throughout the region and performs the construction missions on U.S. Army installations in Massachusetts. Its Real Estate Division acts as nationwide land acquisition coordinator for the Air Force's GWEN program and handles recruitment facility leasing in five of the six New England states for all four military services.

Prior to his current assignment, Colonel Rhen served as the Director of Engineering and Housing at Fort Sill, Oklahoma. He received a bachelor's degree in Geology from the University of Tennessee and a master's degree in Engineering Management from George Washington University. He is a graduate of the U.S. Army Command and General Staff College and the U.S. Army War College.

Colonel Rhen has held numerous command and staff assignments, both in the United States and overseas. His major command assignments include serving as Company Commander, 8th Engineer Battalion, 1st Calvary Division, Korea; and Commander, 13th Engineer Battalion, 7th Infantry Division, Fort Ord, California.

His major staff assignments include serving as Executive Officer, 24th Engineer Battalion, 4th Armored Division, Nurnburg, Germany; Executive Officer, 35th Engineer Group, Fort Bragg, North Carolina; Operations Officer, 20th Engineer Brigade, Fort Bragg, North Carolina; Staff Engineer, Headquarters, U.S. Army Europe and 7th Army, Heidelberg, Germany; Advisor to the Army of Vietnam Chief of Engineers, Military Assistance Command, Vietnam; Resident Officer in Charge of Construction, U.S. Navy, Vietnam; Staff Engineer, Engineer Construction Agency, U.S. Army, Vietnam; Deputy District Engineer, Baltimore District, U.S. Army Corps of

Engineers; and Deputy Assistant, Engineering and Construction Bureau, Panama Canal Commission.

Among his military awards are the Legion of Merit, Bronze Star Medal (two awards), the Meritorious Service Medal (three awards), the Air Medal, the Joint Service Commendation Medal, the Army Commendation Medal, and the Army Achievement Medal.

Colonel Rhen is a native of Dauphin, Pennsylvania. He and his wife, the former Joan Sandblom of Milton, Massachusetts, are the parents of three children.

Mr. **Bevill**. You may proceed as you wish.

Colonel **Rhen**. Thank you, Mr. Chairman.

Mr. Chairman and distinguished members of the committee, I am Colonel Tom Rhen, the New England Division Engineer. I welcome this, my first, opportunity to report to you on the Corps civil works program in New England.

I am accompanied today by the Chief of our Programs Office, Bill Scully, and his assistant, Bobby Byrne.

With your permission, I would like to highlight for you some of this past year's activities and then present our budget request for fiscal year 1987.

### AREA OF RESPONSIBILITY

The geographic area of responsibility of the division is comprised of the six-state New England region, excluding the western half of Vermont. In this area there are some 24 Congressional districts, 2,000 local governments and a population of 12 million people.

It is a region of diverse beauty, from its heavily populated southern coastal areas where you can find the East Coast's leading fishing port of New Bedford, Massachusetts, or the region's major city, port and business center of Boston, to interior rolling hills and rich farmland, to Maine's rocky coast or its pristine northern wilderness, to the mountains of the northern interior.

The Corps' early history dates back to the Revolutionary War period in New England. We have completed more than 300 civil works projects to date in meeting the needs of the region.

### NEW LONDON, CONNECTICUT

We expect to complete the New London, Connecticut hurricane protection project this month. This $12 million project, to which local interests have contributed 30 percent, will provide tidal flood protection to a significant portion of downtown New London.

### WARWICK, RHODE ISLAND

We are also nearing completion of the nonstructural flood control project for the Belmont Park section of Warwick, Rhode Island. All 60 homes to be removed from this chronically flood-prone area along the Pawtuxet River have been acquired.

Contracts are underway for construction of first-floor utility rooms for 15 other homes that suffer primarily basement flooding. An automated flood forecasting system has been installed and is operational.

### KEENE, NEW HAMPSHIRE

This is a view of flooding in Keene, New Hampshire in early June, 1984. We awarded a $1.7 million contract last September to increase the channel capacity of Beaver Brook and modify the outlet structure of the Three Mile Swamp to enhance its ability to temporarily store flood waters in the wetland during flood periods. We are accomplishing this work under Section 205 of the Continuing Authorities Program.

### POINT OF PINES, REVERE, MASSACHUSETTS

Also under the Section 205 authority, we have begun final design of coastal flood protection measures for the Point of Pines area of Revere, Massachusetts. The project's stone revetment, dune restoration and concrete wall will prevent a recurrence of this scene during the February, 1978 blizzard.

### TOWN BROOK, QUINCY AND BRAINTREE, MASSACHUSETTS

We continued our planning and engineering for the Town Brook local protection project in Quincy and Braintree, Massachusetts. The general design memorandum was completed, and all of the feature design memoranda will be finished by this spring. In addition, we already have in hand a set of plans and specifications for the project, accomplished by the local sponsor and turned over to us in the interest of expediting project implementation.

### BULKHEAD REPAIR, CAPE COD CANAL

Rehabilitation of the Sandwich bulkhead along the Cape Cod Canal began last March and is now about 90 percent complete. The steel bulkhead had seriously deteriorated and restoration was essential for its continued use as an emergency tie-up area along the heavily-used canal.

### STUDY COMPLETIONS

Six studies were completed during the past year. These were the review study of the authorized Trumbull Lake project near Bridgeport, Connecticut; the Providence River and Harbor debris removal study; the Rippowam River flood control study in Stamford, Connecticut; the Winnipesaukee River flood control study; the feasibility of navigation improvements on the Connecticut River between Hartford, Connecticut and Holyoke, Massachusetts; and the Long Island Sound Dredged Material Containment Study.

The review of the Trumbull Lake project and alternatives to it determined that there currently are no feasible solutions to flood problems in that area. The report for the Providence River and Harbor debris study recommends no Federal action, primarily because local interests have already accomplished much of the required work.

### RIPPOWAM RIVER, CONNECTICUT

The completed study report for the Rippowam River in Stamford, Connecticut recommends an $850,000 local protection project consisting of modification of a dam with a gate control structure in downtown Stamford be implemented under the Section 205 Continuing Authorities Program. We have initiated the preparation of final plans and specifications for this.

### WINNIPESAUKEE RIVER FLOOD CONTROL

The Winnipesaukee River Basin in central New Hampshire was investigated for possible flood control measures to reduce increasingly recurring flood losses. Rain in early June 1984 caused Lake Winnipesaukee to rise to a record height and flood flows along the Winnipesaukee River were the greatest ever recorded. Severe damage to riverfront properties occurred in Laconia, Tilton and Franklin.

Our study recommends implementation under the continuing authorities program of a $5.5 million project consisting of channel improvements and flood-proofing measures along flood-prone areas of the Winnipesaukee River. The location of work areas are shown in red on this map.

### CONNECTICUT RIVER NAVIGATION, HARTFORD TO HOLYOKE

As requested by this committee, I am reporting today on the results of our updated economic analysis of the authorized but unconstructed navigation project on the Connecticut River between Hartford, Connecticut and Holyoke, Massachusetts. The authorized project provides for a 12-foot deep channel along that reach with dams and navigation locks at two locations.

Our review analyzed the current and projected market need for navigation improvements and updated the commercial benefit estimates and construction costs of the project elements. We have concluded that navigation as a project purpose is not economically justified, and additional investigation is not warranted at this time.

### LONG ISLAND SOUND DREDGED MATERIAL CONTAINMENT

Our detailed studies of constructing containment facilities for the disposal of dredged material in Long Island Sound have determined that they are neither economically nor environmentally justified. In addition, we have found that such facilities lack public support for implementation.

Our final report was submitted in September, 1985. Over 300 sites were identified for the potential deposition of over 60 million cubic yards of dredged material. The report contains the results of extensive investigation of and provides potential impacts associated with five sites that warranted detailed studies.

### WORK FOR OTHERS

We continue to be busy in our Work for Others. Assistance to the Environmental Protection Agency in their construction grants program continues at a high level. We are currently assigned 89 grants for construction of waste water treatment facilities having a construction value of $815 million.

We are also working with EPA on several Superfund projects in the region. One of our major current cooperative efforts involves

New Bedford Harbor, Massachusetts, where we are helping EPA gather and analyze data in a major problem area.

In addition, we are responding to new requests from organizations such as the Internal Revenue Service for their facility maintenance, and the Federal Aviation Administration for real estate support.

### FLOOD CONTROL OPERATIONS

The New England region was fortunate to have an essentially flood-free year in fiscal year 1985.

The 115 flood control projects completed to date have prevented nearly $1.8 billion in damages and, as this slide shows, have already paid a return of nearly four to one on their investment. Also shown are the $681 million in damages prevented during the last major event of June, 1984.

### HURRICANE GLORIA

New England did, however, face a major storm threat last September when, for the first time in 30 years, a major hurricane was poised for a direct hit. Hurricane Gloria headed directly toward New England with high winds, heavy rains and tidal surges of up to 17 feet being forecast. For the first time since they were constructed, hurricane barriers at Stamford, Connecticut; Providence, Rhode Island; and New Bedford, Massachusetts were apparently to be truly tested.

Fortunately and unexpectedly, the hurricane literally disintegrated as it crossed the Connecticut coast. Rainfall was minimal. Tidal surges occurred at time of low tide and were only from four to six feet above normal. Damage for the most part resulted from fallen trees and limbs and to recreational boating. Extensive recovery costs were essentially for power restoration and cleanup. The cleanup effort became such a burden to the cities and towns that disaster declarations were declared for Connecticut, Rhode Island and Massachusetts.

The Corps provided extensive help to FEMA in the cleanup administration effort through the validation of damage reports and cleanup costs.

### FISCAL YEAR 1987 BUDGET REQUEST

I would now like to address our fiscal year 1987 request of $35.6 million. A breakdown of the budget dollar looks like this. As you can see, Operation and Maintenance accounts for 71 percent of the request and Construction nearly 24 percent. Our fiscal year 1987 request, in summary, looks like this. I would like to highlight each category.

### GENERAL INVESTIGATIONS

The budget request of nearly $2 million for General Investigations includes funds to complete two feasibility studies and continue three others.

## SOUTHEASTERN NEW ENGLAND COMPREHENSIVE

### REVERE, MASSACHUSETTS AREA FLOOD CONTROL STUDIES

One of the studies to be continued is the investigation of solutions to coastal flood problems in the Revere, Massachusetts area, being accomplished under the Southeastern New England study. It now appears that there may be a feasible common solution to flood problem areas shown in light blue and yellow on this map in the communities of Revere, Lynn, Malden and Saugus. Our efforts in the current year will better define the possible alternatives. The study cost estimate will increase, but I will not be in a position to detail that increase to this committee until next year.

### OTHER STUDIES, PLANNING AND ENGINEERING

The request also provides funding for a reconnaissance study of flood problems in the West Central Connecticut coastal area. Funds are requested in the Continuation of Planning and Engineering category to initiate activity for the New Haven Harbor, Connecticut navigation improvement and to complete that effort for the flood protection project at Roughans Point in Revere, Massachusetts. Severe tidal flooding at Roughans Point during the February 1978 blizzard is seen here.

The request also provides for completion of advance engineering and design for the navigation project at Bristol Harbor, Rhode Island. This is a rendering of the proposed breakwater structure for Bristol Harbor.

### CONSTRUCTION, GENERAL

The $8.4 million Construction, General request is for the continuation of one project and the initiation of two others.

### JONESPORT HARBOR, MAINE

We are requesting $4.7 million to continue construction of the navigation project at Jonesport Harbor, Maine. This project was included in the Fiscal Year 1985 Supplemental Appropriations Act as a new start, and we expect to award a construction contract this calendar year. This project will provide a much needed breakwater and anchorage for the commercial fishing fleet of this northern Maine community.

### PORTSMOUTH HARBOR AND PISCATAQUA RIVER

Included as a new start is the navigation improvement for Portsmouth Harbor and the Piscataqua River that forms part of the boundary between New Hampshire and Maine. This $19 million project will provide for widening of the existing 35-foot channel in three areas, two of which are between the bridges seen here, to improve what are now serious navigational safety hazards. We are requesting $3 million to initiate construction. Implementation of the project is subject to enactment of now-pending authorizing legislation.

### REVERE BEACH, MASSACHUSETTS

The other new start is the Revere Beach, Massachusetts shore protection project. The more than two-mile long beach is the oldest public beach in the nation and is just six miles from downtown Boston. The project provides for the placement of sandfill that will protect the seawalls and floodwalls that are being seriously undermined by wave action. Local interests have contributed 36 percent of the project cost and have already appropriated their contribution.

### OPERATION AND MAINTENANCE

The Operation and Maintenance program request of $25.3 million represents a slight decrease from the fiscal year 1986 program level. A total of $10.1 million will be used for the operation and maintenance of 31 reservoirs and two hurricane barriers; $12.3 million will be used for navigation maintenance, including dredging of three channel and harbor projects and operation of the Cape Cod Canal; and $2.9 million will be used for regulatory functions.

The funds requested for the Cape Cod Canal include provision for a major maintenance item, the rehabilitation of the vertical lift railroad bridge. This $4.5 million effort will be initiated later this year.

### RECREATION AREAS

Even with New England's natural richness in outdoor recreational opportunities, public use of our projects continues to be very popular in all seasons. Visitation in 1985, measured in visitor days, was six million people.

### PENDING AUTHORIZATIONS

Five major projects in the region are included in currently pending authorization legislation. These are the deep draft navigation projects for Portsmouth Harbor, New Hampshire and New Haven Harbor, Connecticut; local protection projects for Roughans Point in Revere and along Town Brook in Quincy, Massachusetts; and the multiple-purpose Big River Reservoir in Rhode Island.

Regional water resources people are encouraged by the improved outlook for an omnibus bill and the resolution of cost sharing questions that have had the civil works program in a state of uncertainty. As always, the men and women of the New England Division stand ready and look forward to meeting the challenges of the water resource needs of the customers we serve, the people of the region.

Mr. Chairman, that concludes my presentation. I would be pleased to answer your questions.

### JUSTIFICATION MATERIAL

Mr. BEVILL. Thank you. We will insert the justification material for the New England Division in the record at this point, without objection.

[The justifications follow:]

## Justification of Estimates for Civil Functions Activities
## Department of the Army, Corps of Engineers
## Fiscal Year 1987
## SUMMARY NEW ENGLAND DIVISION

|  | F.Y. 1986 Allocations $ | F.Y. 1987 Request $ | Increase or Decrease $ |
|---|---|---|---|
| General Investigations |  |  |  |
| Surveys Including Phase I Stage of AE&D | 1,151,000 | 1,193,000 | 42,000 |
| Continuation of Planning and Engineering | 400,000 | 750,000 | 350,000 |
| Advance Engineering and Design | 170,000 | 40,000 | -130,000 |
| Construction, General |  |  |  |
| Construction | 685,000 | 8,400,000 | 7,715,000 |
| Major Rehabilitation and Dam Safety Assurance | 0 | 0 | 0 |
| Operation and Maintenance, General |  |  |  |
| Project Operation and Maintenance | 25,984,000 | 25,261,000 | -723,000 |
| Major Rehabilitation | 0 | 0 | 0 |
| Total | 28,390,000 1/ | 35,644,000 | 7,254,000 |

1/ Does not reflect reduction required by the Balanced Budget and Emergency Deficit Control Act of 1985 (Public Law 99-177).

| Study | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ |

1. Surveys - New:

a. Navigation Studies: None.

b. Flood Damage Prevention Studies: None.

c. Shoreline Protection Studies: None.

d. Special Studies: None.

e. Comprehensive Studies: The amount of $250,000 is requested in Fiscal Year 1987 to initiate and complete one reconnaissance study. The tentative allocation is as follows:

Connecticut

| | | | | | |
|---|---|---|---|---|---|
| Long Island Sound, CT and RI (Authorization Reports) -- West Central Connecticut Coastal Flooding | 250,000 | 0 | 0 | 250,000 | 0 |

The study area is a 30-mile stretch of Long Island Sound coastline in West Central Connecticut. This coastal reach, located about 50 miles from New York City, is situated in eight communities: Westport, Fairfield, Bridgeport, Stratford, Milford, West Haven, New Haven and East Haven. Flooding is caused along this reach by high tide levels which are induced by ocean storm surges and wind driven waves accompanying hurricanes and coastal storms. The State of Connecticut has identified this reach, with over 15,000 residences and 1,200 commercial/industrial buildings, as the highest coastal flood hazard area in the State. There are flood insurance policies with a value of $440 million in effect for this area, and claims in the past six years have totalled $7.6 million. This study will address the feasibility of providing structural and nonstructural solutions to alleviate the flooding potential. The reconnaissance phase will concentrate on: the definition of potential solutions; the determination of whether planning should proceed based on preliminary appraisal of the Federal interest, costs, benefits and impacts of identified potential solutions; an estimate of the cost of the feasibility phase if planning is to continue; and finally, to complete the reconnaissance study, the completion of a contract with the study sponsor to share in feasibility study costs. Meetings have been held with State of Connecticut officials to discuss the nature and scope of the study, and local

| Study | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ |

e. Comprehensive Studies: Long Island Sound -- West Central Connecticut Coastal Flooding (Cont'd)

interests are aware of the potential for cost sharing of the feasibility phase that may follow, and there has been no objection to such participation. The reconnaissance phase is scheduled for completion in March 1988.

f. Project Review Studies: None.

| | | | | | |
|---|---|---|---|---|---|
| TOTAL SURVEYS - NEW | 250,000 | 0 | 0 | 250,000 | 0 |

2. Surveys - Continuing:

a. Navigation Studies: The amount of $80,000 is requested for completion of one study during Fiscal Year 1987. The tentative allocation is as follows:

Massachusetts

| | | | | | |
|---|---|---|---|---|---|
| Boston Harbor | 735,000 | 505,000 | 150,000 | 80,000 | 0 |

The Port of Boston, the largest seaport in New England, is the principal distributing point for the commerce of Massachusetts, New Hampshire and Vermont. The main deep water harbor is comprised of the waterways of the Main Ship Channel, Reserved Channel, Chelsea River and Mystic River. Commerce for the year 1983 in the Port of Boston totalled 17 million tons of which 88 percent was comprised of petroleum and petroleum products. Forty-six percent of the traffic in Boston Harbor utilized the Chelsea River. The percentage of traffic passing through the Chelsea River has been steadily increasing over the past several years. However, decline in the world petroleum industry over the past several years has reduced the need for a two-way navigation channel as previously envisioned. Reformulation of previous plans is underway to determine if a scaled down project is justified. Plans being considered include: improvements to the Chelsea River by widening of the Chelsea Street bridge and/or deepening the river from its present 35-foot depth to 38 feet or 40 feet (mean low water), deepening the 40-foot anchorage at President Roads, and deepening the 40-foot Broad Sound North Entrance Channel. Fiscal Year 1986 funds are being used to complete design and cost estimates for the reformulated plans. Efforts also include updating the economic analyses and Environmental Impact Statement (EIS). Funds requested for Fiscal Year 1987 will be used to complete the EIS and the feasibility report. The study report of the Division Engineer is scheduled for completion in June 1987.

| | | | | | |
|---|---|---|---|---|---|
| Total Continuing Navigation Studies | 735,000 | 505,000 | 150,000 | 80,000 | 0 |

| Study | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ |

b. Flood Damage Prevention Studies: The amount of $400,000 is requested for continuation of one study during Fiscal Year 1987. The tentative allocation is as follows:

Maine

| | | | | | |
|---|---|---|---|---|---|
| Saint John River | 3,000,000 | 1,745,000 | 200,000 | 400,000 | 655,000 |

This study considers the water resource needs of the Saint John River Basin with particular emphasis on flood control, power, water quality, irrigation and related purposes. The Saint John River, an international stream, drains 21,360 square miles of rugged and scenic forest and agricultural lands, covering some 22 percent of the State of Maine. Frequent flooding on the major rivers in the basin caused by spring snowmelt, precipitation and ice jams has resulted in considerable damages to the surrounding communities. Thirty-one communities in five sub-basins were investigated to determine the need and justification for structural and nonstructural flood control improvements. The preliminary investigations identified nine communities in the Upper Saint John River Basin, nine communities in the Aroostook River Basin, six communities in the Fish River Basin, three communities in the Meduxnekeag River Basin and four communities in the Prestile Stream Basin as having potentially significant flooding problems. Comprehensive water resources studies of these basins have been requested by the State and local officials. Completed studies also indicated that cropland irrigation and conservation are major needs of the basin. An interim report entitled "Feasibility Report for Cropland Irrigation and Conservation: Research/Demonstration Program," completed in May 1980, recommended a plan to be administered by the State of Maine and other agencies to implement, monitor, and evaluate irrigation and conservation practices. The Aroostook River Basin interim study, completed in July 1984, recommends a local protection project for Fort Fairfield. Fiscal Year 1986 funds are being utilized to complete preliminary evaluation studies for the Upper Saint John River Basin, Fish and Meduxnekeag Rivers and Prestile Stream. Formulation and evaluation of detailed plans for the Upper Saint John and Fish Rivers will also be performed. Funds requested for Fiscal Year 1987 will be used to complete feasibility studies for the Upper Saint John and Fish River sub-basins and to perform formulation and evaluation of plans for the Meduxnekeag River and Prestile Stream sub-basins. The study cost estimate has decreased $810,000. This change reflects actual costs for completing the Aroostook River Basin studies ($100,000) and a refined schedule for completing studies on the remaining sub-basins ($710,000). The final study report of the Division Engineer is scheduled for completion in December 1989.

| | | | | | |
|---|---|---|---|---|---|
| Total Continuing Flood Damage Prevention Studies | 3,000,000 | 1,745,000 | 200,000 | 400,000 | 655,000 |

| Study | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
|  | $ | $ | $ | $ | $ |

c. Shoreline Protection Studies: None.

d. Special Studies: None.

e. Comprehensive Studies: The amount of $463,000 is requested for completion of one study and continuation of two studies during Fiscal Year 1987. The tentative allocations are as follows:

Connecticut

| Study | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| Connecticut River Basin, CT, MA, NH and VT (Authorization Reports) | 4,545,000 | 2,581,000 | 200,000 | 190,000 | 1,574,000 |

Comprehensive and supplemental studies of the Connecticut River Basin, completed under the direction of the former New England River Basins Commission, determined the existing and future water and related resource needs of the basin and formulated plans to meet those needs. The purpose of this study is to prepare authorization reports on those projects in the comprehensive plan that are the responsibility of the Corps of Engineers and which will receive the endorsement of their respective states. Feasibility reports were completed for Colebrook River Lake, Connecticut and Littleville Lake, Massachusetts and indicated that hydropower is feasible at both sites. The Hartford Metropolitan District has been granted a license to construct hydropower facilities at Colebrook. Current effort on the Connecticut River Basin study has been redirected to review and update flood control data previously developed for the Westfield River sub-basin in Massachusetts as a result of heavy rains and subsequent flooding in late May-early June 1984. This flood's magnitude was estimated to be in excess of 50-year frequency in the lower Connecticut River mainstem area for which the two existing Corps' reservoirs in the Westfield River basin are primarily operated. These reservoirs, upstream of the City of Westfield, provide protection to communities along the Westfield River as well as contributing to the system protection of major population centers along the Connecticut River. One reservoir was filled to capacity, for the third time in 42 years, and the other reservoir filled to 74 percent capacity during this event. Fiscal Year 1986 funds are being used to complete the screening of alternatives. Plans being considered include a tunnel to bypass flood flows from the City of Westfield, modification of existing dams and alternative flood damage reduction methods. Funds requested for Fiscal Year 1987 will be used to initiate and complete impact assessments and evaluation of alternatives leading to selection of a recommended plan. The final report of the Division Engineer is scheduled for completion in September 1990. An authorization report for the Westfield River is scheduled for completion in September 1987.

| Study | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
|  | $ | $ | $ | $ | $ |
| e. Comprehensive Studies: (Cont'd) |  |  |  |  |  |
| Long Island Sound, CT and RI (Authorization Reports) | 460,000 | 260,000 | 150,000 | 50,000 | 0 |

The Long Island Sound area was the subject of a Comprehensive Level B study which was completed and submitted to the Water Resources Council on 28 July 1975. The study contained a comprehensive plan consisting of specific projects and programs which the former New England River Basins Commission recommended for use as a guide for future development of the water and related land resources of the study area. Joint Federal, State and local actions were proposed to clean up the waters of the sound, open its shores to increased recreation, protect natural areas, reduce flood damage, improve marine transportation and redevelop urban waterfronts. Authorization reports will be prepared for those proposed projects in the early action program of the comprehensive plan that have received the endorsement of local interests and which are the responsibility of the Corps of Engineers. The comprehensive plan recommended that the Corps of Engineers conduct detailed tidal-flood plain management studies to develop alternative plans for flood damage reduction in seven tidal-flood prone areas. These studies will serve as a model for design and adoption of programs and policies for flood plain management throughout the coastal areas. The Thamesville section of Norwich was selected for initiation of detailed studies. Fiscal Year 1986 funds are being used to complete the assessment of preliminary alternatives leading to selection of a recommended plan. Detailed studies including hydrologic and hydraulic modeling will be initiated for the recommended plan. Funds requested for Fiscal Year 1987 will be used to complete studies for Thamesville. The study cost estimate has increased $20,000. This change reflects a refined estimate for remaining work ($15,000) and Federal pay raises ($5,000). The final report of the Division Engineer is scheduled for completion in April 1987.

Massachusetts

|  |  |  |  |  |  |
|---|---|---|---|---|---|
| Southeastern New England, MA, RI and CT (Authorization Reports) | 2,550,000 | 2,024,000 | 228,000 | 223,000 | 75,000 |

The comprehensive Level B study of the Southeastern New England area is an approved regional water resource management plan. The study considered all aspects of water resource needs for an area encompassing some 4,410 square miles, of which 3,270 square miles are in Massachusetts, 1,050 in Rhode Island, and 90 in Connecticut. The region is highly urbanized and supports a population of about 5 million. The plan has served as a guide for better use of the water and related land resources of the Southeastern New England area. Authorization reports are being prepared on locally supported projects that are the responsibility of the Corps of Engineers. Serious tidal flooding problems exist along

| Study | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ |

e. Comprehensive Studies: Southeastern New England (Authorization Reports) (Cont'd)

the Massachusetts coastal area. Encroachment in the flood plain and urbanization have increased the potential for serious flood damages in many watersheds in the study area. Severe tidal flooding suffered along the coast of Massachusetts has dictated an urgent need for investigations to determine the feasibility of providing protection against coastal storms. The most recent example of severe damage occurred during the February 1978 storm which caused an estimated $14.4 million in flood damages to over 1400 properties in the City of Revere and an estimated $10.1 million in flood damages to over 800 properties in the City of Lynn. Additional damages also occurred in the communities of Saugus and Malden. Another storm in January 1979 also caused damage to the Revere, Lynn, and Saugus communities. In view of the frequency of recurring widespread tidal flooding in the area, local interests have strongly recommended that the Corps formulate solutions to alleviate the serious flood problems. Studies were initiated in Fiscal Year 1980 to determine potential solutions in Revere. An interim feasibility report for Roughans Point, the neighborhood in Revere experiencing the severest damages, was completed in December 1982. The recommended plan for Roughans Point provides for a seaward sloping berm and interior drainage improvements. Initial study effort considered solutions to flood problems in Revere; however, officials from the communities of Lynn, Saugus and Malden have asked that a comprehensive plan be developed for the four communities that would provide protection to a total of 4,000 properties including a large industrial complex whose principal products are for the Department of Defense. Consequently, alternatives being developed to alleviate flooding in Revere have been expanded to include protection for the communities of Lynn, Saugus and Malden. Hydrologic modeling studies, completed in Fiscal Year 1986, have indicated higher tidal flooding can occur than had been previously estimated. As a result, flooding could be more widespread during rare events. This has a significant impact on the potential feasibility of the larger, more comprehensive plans. Fiscal Year 1986 funds are being used to evaluate plans that will provide protection to the communities of Revere, Lynn, Saugus, and Malden in light of changed hydrologic data. Results of the assessment will determine which plan or plans warrant detailed investigations. Funds requested for Fiscal Year 1987 will be used to evaluate the feasibility of several local protection projects as well as tidal gate barrier alternatives and to determine a final plan. The study cost estimate has increased $150,000. This change reflects efforts to determine the extent of additional studies required, based on updated hydrologic data and meetings with state agencies ($135,000) and Federal pay raises ($15,000). The final report of the Division Engineer is scheduled to be completed in December 1987.

| | | | | | |
|---|---|---|---|---|---|
| Total Continuing Comprehensive Studies | 7,555,000 | 4,865,000 | 578,000 | 463,000 | 1,649,000 |

f. Project Review Studies: None.

| | | | | | |
|---|---|---|---|---|---|
| TOTAL SURVEYS - CONTINUING | 11,290,000 | 7,115,000 | 928,000 | 943,000 | 2,304,000 |

| Study | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
|  | $ | $ | $ | $ | $ |

3. Surveys - Continuation of Planning and Engineering:

a. Navigation Studies: The amount of $450,000 is requested in Fiscal Year 1987 to initiate one study. The tentative allocation is as follows:

Connecticut

|  |  |  |  |  |  |
|---|---|---|---|---|---|
| New Haven Harbor | 550,000 | 0 | 0 | 450,000 | 100,000 |

New Haven Harbor is in south central Connecticut on the north shore of Long Island Sound about 75 miles northeast of New York City. An important eastern harbor, the Port of New Haven is in terms of tonnage shipped and received the largest port in Connecticut and the third largest in New England, ranking only behind the ports of Boston and Portland. The port has historically been the dominant influence in stimulating the industrial growth and economic progress of south central Connecticut. The harbor's major navigational problem is the lack of adequate channel dimensions and maneuvering area of sufficient depth to handle larger vessels now in general use in the petroleum trade. Petroleum products account for 91 percent of the marine commerce in the port. The proposed improvements as recommended in the Chief of Engineers report provide for deepening the main ship channel from 35 feet to 40 feet over a length of about 7 miles, widening the main ship channel from 400 feet to 500 feet over a distance of 4 miles, widening the ship channel bend at Southwest Ledge from 560 feet to a minimum of 780 feet, straightening the channel bend downstream of the existing turning basin and revising the configuration of the existing 35-foot deep turning basin to provide a common, smaller 40-foot turning basin. The October 1985 estimated project cost is $26,500,000. Consistent with the cost-sharing and financing concepts agreed to by the Administration and the Senate majority leadership, local interests would be required to pay 25 percent of project costs during construction presently estimated at $6,620,000 and pay an additional 10 percent of the project costs within a period of 30 years following completion if not offset by credit allowed by the Secretary of the Army. The average annual benefits are $3,778,000 for navigation. The benefit-cost ratio is 1.16 at 8 5/8 percent. Funds requested for FY 1987 will be used to initiate planning and engineering. The General Design Memorandum will be completed in September 1988.

|  |  |  |  |  |  |
|---|---|---|---|---|---|
| Total CP&E Navigation Studies | 550,000 | 0 | 0 | 450,000 | 100,000 |

b. Flood Damage Prevention Studies: The amount of $300,000 is requested for completion of one planning and engineering study during Fiscal Year 1987. The tentative allocation is as follows:

Massachusetts

| Study | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ |
| Massachusetts Coastal, Roughans Point, Revere | 905,000 | 305,000 | 300,000 | 300,000 | 0 |

Roughans Point is a densely populated residential area in the coastal community of Revere, Massachusetts, 5 miles north of Boston. Flooding, due to storm tides and wave overtopping, is a constant problem in Roughans Point. Damages occur annually, with severe flooding occurring every 8 years. Recent severe floods occurred in 1959, 1972 and 1978. A recurrence of the 1978 storm at Roughans Point would result in nearly $11 million in damages. Over 300 structures, of which 291 are homes, would be inundated with up to 8 feet of water. The plan of improvement included in the interim report on Massachusetts Coastal Flooding for Roughans Point, approved by the Board of Engineers for Rivers and Harbors on 1 December 1983, recommends a 4,080-foot long wave dissipating armor stone revetment. Features include an earth berm and an existing road embankment to prevent backwater flooding as well as interior drainage provisions. The project would prevent 92 percent of the damages incurred by a 100-year event. The October 1985 estimated project cost is $9,200,000. Consistent with the cost-sharing and financing concepts agreed to by the Administration and the Senate majority leadership, local interests will be required to pay 35 percent of project costs, presently estimated at $3,220,000. The average annual benefits are $1,342,000 of which $1,205,000 are for urban flood damage prevention and $137,000 for affluence. The benefit-cost ratio is 1.6 to 1 at 8 5/8 percent. Fiscal Year 1986 funds are being utilized to continue the hydraulic analysis studies and to complete the detailed General Design Memorandum. Funds requested for Fiscal Year 1987 will be used to complete the tidal hydraulics and hydrology design memorandum and the embankment and foundation design memorandum. This continuation of planning and engineering effort is scheduled for completion in September 1987.

| Study | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| Total CP&E Flood Damage Prevention Studies | 905,000 | 305,000 | 300,000 | 300,000 | 0 |

c. Shoreline Protection Studies: None.

d. Special Studies: None.

| Study | Total Estimated Federal Cost | Allocation Prior to FY 1986 | Allocation FY 1986 | Tentative Allocation FY 1987 | Additional to Complete After FY 1987 |
|---|---|---|---|---|---|
| | $ | $ | $ | $ | $ |
| e. Comprehensive Studies: None. | | | | | |
| f. Project Review Studies: None. | | | | | |
| TOTAL SURVEYS - CONTINUATION OF PLANNING AND ENGINEERING | 1,455,000 | 305,000 | 300,000 | 750,000 | 100,000 |
| 4. Phase I Stage of Advance Engineering and Design - New | (None) | | | | |
| 5. Phase I Stage of Advance Engineering and Design - Continuing | (None) | | | | |
| 6. Phase I Stage of Advance Engineering and Design - Continuation of Planning and Engineering Studies | (None) | | | | |
| GRAND TOTAL - SURVEYS AND PHASE I STAGE OF ADVANCE ENGINEERING AND DESIGN | 12,995,000 | 7,420,000 | 1,228,000 | 1,943,000 | 2,404,000 |

APPROPRIATION TITLE: General Investigations - Advance Engineering and Design - Channels and Harbors (Navigation)

PROJECT: Bristol Harbor, Rhode Island (Continuation of Planning)

LOCATION AND DESCRIPTION: Bristol Harbor is on the east side of upper Narragansett Bay, in Bristol County, about 13 miles southeast of Providence, Rhode Island. The project provides for a concrete "A-frame" structure breakwater, 1,250 feet long, located on the east side of Bristol Harbor and detached from the mainland so as to provide a protected anchorage area of approximately 42 acres.

AUTHORIZATION: 1968 River and Harbor Act

BENEFIT-COST RATIO: The benefit-cost ratio last presented to Congress (FY 1986) was 4.0 to 1. The current benefit-cost ratio is 2.2 to 1 at 3 1/4 percent. The benefit-cost ratio is based on the project functioning independently.

SUMMARIZED FINANCIAL DATA

| | | |
|---|---|---|
| Estimated Federal Cost (Corps of Engineers) | | $2,840,000 |
| Estimated Federal Cost (U.S. Coast Guard) | | 10,000 |
| Estimated Non-Federal Cost | | 1,260,000 |
| Cash Contribution | $1,260,000 | |
| Other Cost | 0 | |
| Total Estimated Project Cost | | $4,110,000 |

| | |
|---|---|
| Preconstruction Planning Estimate | $560,000 |
| Allocations to 30 September 1985 | 350,000 |
| Conference Allowance for FY 1986 | 170,000 |
| Allocation for FY 1986 | 170,000 |
| Planning Allocation for FY 1987 | 40,000 |
| Balance to Complete Preconstruction Planning After FY 1987 | 0 |

JUSTIFICATION: The basic need in Bristol Harbor is for a protected anchorage to safely and adequately accommodate the present commercial and recreational boating fleets and to provide an opportunity for future boating growth. The harbor is presently exposed to storm driven waves from the southwesterly and southeasterly directions that hamper the use of existing vessels and inhibit the growth of the commercial fishing and recreational fleets. The primary problems are a lack of protected anchorages, a need for additional recreation boat facilities and the continual damage from waves to which the docks and piers along the easterly commercial/industrial area and westerly shoreline are subjected. A large number of small shellfish boats use the harbor as a base of operations and sell their catch to local dealers. Because of its favorable location in Narragansett Bay and proximity to the Providence Metropolitan area, the harbor is intensively used as a base for sportfishing boats and moderate size recreational craft. A U.S. Coast Guard Buoy Depot is located on the east shore at the southernmost terminus of the commercial and industrial section of the harbor. The Prudence Island Ferry, the main line of support for Prudence and Hog Islands, operates out of Bristol Harbor. Southerly waves cause pier damages and hazardous operational conditions at both the Coast Guard and ferry facilities. The construction of the breakwater would provide the protection necessary to correct these problems and also stimulate growth of the commercial and recreational fleets which are vitally essential to future economic development within the area. The average annual benefits are as follows:

| Breakdown of Average Annual Benefits | Amount<br>(1 October 1985) |
|---|---|
| Recreational Boating | $213,000 |
| Commercial Fishing | 153,000 |
| Reduced Damages to Shore Facilities | 40,000 |
| Total | $406,000 |

NON-FEDERAL COSTS: Consistent with the cost-sharing and financing concepts agreed to by the Administration and the Senate majority leadership, local interests will be required to provide all lands, easements and rights-of-way necessary for the construction and subsequent maintenance of the project; hold and save the United States free from damages due to construction and subsequent maintenance of the project; provide and maintain berths, floats, piers and/or similar marina and mooring facilities open and available to all on equal terms; pay during construction for one-half of the costs allocated to recreational navigation, presently estimated at $1,060,000 and bear all costs of operation and maintenance associated with recreational navigation, presently estimated at $11,000 annually; pay during construction for 10 percent of the costs allocated to commercial navigation, presently estimated at $200,000; and pay an additional 10 percent of the costs allocated to commercial navigation within a period of 30 years following completion.

STATUS OF LOCAL COOPERATION: Local cooperation agreements, consistent with the requirements of Section 221 of the 1970 Flood Control Act and in accordance with the agreement between the Administration and the Senate majority leadership, will be requested during final design. It is expected that the State of Rhode Island and Town of Bristol would share the local costs. State officials have indicated their concurrence with the project. The Town Council of the Town of Bristol passed a resolution on September 12, 1980 endorsing a breakwater plan and expressing intent to participate actively in the sharing of the costs of the project. The resolution was reconfirmed by a Town Council vote on June 10, 1981. In a letter dated March 16, 1984 the Town Council notified the Division Engineer that the Council, at a regular meeting on March 14th, had voted unanimously that a Letter of Intent be sent to the Corps to reconfirm the Town Council's resolutions of September 1980 and June 1981. In May 1984, a meeting was held in Bristol between Town officials and Corps' project engineers to discuss the currently recommended design structure, a concrete "A-frame" dogleg breakwater. Following that meeting, we received a letter dated May 29, 1984 notifying us that at its regular meeting of May 23, 1984 the Council had voted unanimously to have the Corps proceed with the final design of the breakwater discussed at the meeting with Corps officials.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal (Corps of Engineers) cost estimate of $2,840,000 is an increase of $280,000 from the latest estimate ($2,560,000) submitted to Congress. This change reflects increases of $60,000 for higher price levels and $220,000 net due to cost-sharing change. The latter results from applying cost-sharing concepts agreed to by the Administration and the Senate majority leadership and includes a $360,000 increase due to a higher percentage of project costs now allocated to commercial navigation based on projected project benefits, partially offset by a $140,000 decrease based on those agreed-to changes in cost-sharing concepts (higher non-Federal for commercial navigation).

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: A Draft Environmental Assessment was completed in November 1981 as part of Phase I General Design Memorandum and issued for public release. No significant environmental concerns were raised during the comment period. The assessment will be updated in conjunction with preparation of the final General Design Memorandum.

The provisions of Section 404 of the Clean Water Act have been partially met with the circulation of Section 404(b)(1) Public Notice and Evaluation as part of the Phase I General Design Memorandum. To complete provisions, a Water Quality Certification from the State of Rhode Island will be requested in the 3rd quarter of FY 1986.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1979. Preconstruction planning is scheduled to be completed in January 1987.

The Town of Bristol is actively working on the resurgence of its harbor as a major fishing port in addition to its already extensive recreational use. The Town has appropriated funds for master planning of the waterfront/downtown district with the single purpose of reviving commercial activity in that area. More than $50,000 has been spent on harbor development plans. A multi-million dollar waterfront renewal development has been planned. In addition, the Town is working with the State of Rhode Island to convert present "town dock" property to commercial fishing wharfage. The Bristol Harbor breakwater construction is considered to be a major segment of the harbor improvement.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: New England Project: Bristol Harbor, Rhode Island

| | Estimates Presented to Congress ($1,000) | | | | |
|---|---|---|---|---|---|
| Item | Original Baseline (1) | Cumulative Changes (2) | Last (3) | Incremental Change (4) | Current (5) |
| Federal Cost<br>(Price Level) | 2,225<br>(Oct 1977) | | 2,560<br>(Oct 1984) | | 2,840<br>(Oct 1985) |
| Reason for Change | | (335) | | (280) | |
| a. Price Escalation | | 1,227 | | 60 | |
| b. Design Changes | | -1,750 | | | |
| c. Additional Functions Added Under General Authority | | | | | |
| d. Authorized Modifications | | | | | |
| e. Post-Contract Award and Other Estimating Adjustments | | -87 | | | |
| f. Schedule Changes | | | | | |
| g. Sundry | | 945 1/ | | 220 2/ | |
| h. Real Estate | | | | | |

1/ Adjustment in anticipated cost-sharing percentage.

2/ Reflects application of cost-sharing concepts agreed to by the Administration and the Senate majority leadership. Includes a 360 increase due to a higher percentage of project costs now allocated to commercial navigation based on projected project benefits, partially offset by a 140 decrease based on those agreed-to changes in cost-sharing concepts (higher non-Federal for commercial navigation).

APPROPRIATION TITLE: Construction, General - Channels and Harbors (Navigation)

PROJECT: Portsmouth Harbor and Piscataqua River, New Hampshire and Maine (New)

LOCATION: Portsmouth Harbor, formed by the mouth of the Piscataqua River along the Maine-New Hampshire boundary, is located about 45 miles northeast of Boston.

AUTHORIZATION: Not authorized; implementation is contingent upon enactment of pending legislation to authorize construction.

BENEFIT-COST RATIO: The benefit-cost ratio is 1.5 to 1 at 8 5/8 percent. The benefit-cost ratio is based on the project functioning independently.

| SUMMARIZED FINANCIAL DATA | | | | Accumulated % of Est. Fed. Cost |
|---|---|---|---|---|
| Estimated Appropriation Requirement (C of E) | | $14,300,000 | | |
| Estimated Appropriation Requirement (U.S.C.G.) | | 20,000 | | |
| Estimated Total Appropriation Requirement | | 14,320,000 | | |
| Future Non-Federal Reimbursement | | 1,950,000 | | |
| Estimated Federal Cost (Ultimate) | | 12,370,000 | | |
| Estimated Non-Federal Cost | | 6,650,000 | | |
| Cash Contribution | $4,700,000 | | | |
| Reimbursements: Comml Navigation | 1,950,000 | | | |
| Total Estimated Project Cost | | $19,020,000 | | |
| Allocations to 30 September 1985 | | $ 0 | | |
| Conference Allowance for FY 1986 | | 0 | | |
| Allocation for FY 1986 | | 0 | | |
| Allocations to Date | | 0 | | |
| Allocation Requested for FY 1987 | | $ 3,000,000 | 1/ | 21 |
| Scheduled Balance to Complete After FY 1987 | | 11,300,000 | | |
| Unscheduled Balance to Complete After FY 1987 | | 0 | | |

| STATUS (1 January 1986) | PERCENT COMPLETE | COMPLETION SCHEDULE |
|---|---|---|
| Channel Dredging | 0 | Dec 1988 |
| Entire Project | 0 | Dec 1988 |

PHYSICAL DATA

Widen existing 35-foot deep channel from 600 feet to 1,000 feet between two vertical lift bridges to create emergency maneuvering area.

Widen northern limit of existing 35-foot deep channel adjacent to Badgers Island by 100 feet.

Widen southern limit of existing 35-foot deep channel at Goat Island from 400 to 500 feet.

1/ Obligation and expenditure of budgeted funds for construction of this project are contingent upon enactment of legislation enabling recovery of all or part of the costs to be expended by the project sponsor and the Federal government in accordance with the agreement between the Administration and the Senate majority leadership.

JUSTIFICATION: Portsmouth Harbor is the sole deep draft harbor located in the State of New Hampshire. Waterborne commerce has increased from 1.8 million tons in 1969 to an average of 2.8 million tons over the past 5 years. Harbor users expect Portsmouth Harbor to continue to play a significant role in the economy of the region by handling an increasing amount of commerce. The harbor also serves as the home of the Portsmouth Naval Shipyard and the avenue of fuel deliveries to Pease Air Force Base. Hazardous conditions in the river make it difficult for local users to realize the full potential of the existing navigation project. In an unsafe practice, vessels with lengths of up to 700 feet now use the channel. The existing 35-foot deep, 400-foot wide Federal channel that is characterized by sharp bends, swift current, narrow lift bridges, inadequate turning basins and a tortuous natural channel limits safe navigation by deep-draft vessels even during periods of slack water. The direct impact to users is that the harbor will be unable to remain competitive and that they cannot realize savings in waterborne transportation costs associated with larger size ships without project modification. Of major concern is the safety hazard for ships using the harbor. With petroleum representing 80 percent of the marine commerce in the port, an accident involving a petroleum carrier could result in an oil spill with catastrophic environmental and economic consequences. The proposed improvement of widening the existing channel in three areas would address the two major issues facing Portsmouth Harbor: namely the need to accommodate a greater number of the large ships required to realize waterborne transportation savings; and the need to improve the safety of deep-draft navigation in the harbor. The average annual benefits, all commercial navigation, are estimated at $2,533,000 at 1 October 1985 prices.

COMPLETED OR REMAINING MODIFICATIONS: Work completed consists of a 35-foot channel, 400 feet wide with additional width at the bends at Henderson Point, Gangway Rock, Badger's Island, the Maine-New Hampshire Interstate Bridge and Boiling Rock, from deep water in Portsmouth Harbor to a point about 1,700 feet above the Sprague dock in Newington; a 950-foot turning basin above Boiling Rock and an 850-foot turning basin at the head of the project; both at 35 feet; a 6-foot channel, 100 feet wide from Little Harbor through the Rye-New Castle drawbridge and then northerly between the mainland and Leach's Island to deep water near Shapleigh Island; and a 6-foot channel, 75 feet wide up Sagamore Creek with an anchorage strip of the same depth, 75 feet wide and totaling 3 acres, in Sagamore Creek. The existing project was completed in 1971 at a total cost of $5,384,043. There are no uncompleted modifications.

FISCAL YEAR 1987: The requested amount will be applied as follows:

| | |
|---|---|
| Initiate channel dredging | $2,640,000 |
| Engineering and Design | 195,000 |
| Supervision and Administration | 165,000 |
| Total | $3,000,000 |

NON-FEDERAL COSTS: Consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate majority leadership, local interests are required to provide all lands, easements and rights-of-way necessary for construction and later maintenance of the project including suitable areas determined by the Chief of Engineers to be required in the general public interest for initial and later disposal of dredged material and including necessary retaining dikes, bulkheads, and embankments therefor, or the costs of such retaining works; provide and maintain adequate terminal and transfer facilities open to all on equal terms; provide and maintain adequate depths in berthing areas and local access channels serving the terminals; accomplish all alterations and relocations of transportation facilities (excluding railroads, combined highway and railroad and publicly owned highway bridges and approaches thereto), storm drains, sewer outfalls, utilities and other structures and improvements made necessary by the project; provide a cash contribution based on the final project cost allocated to any special local benefits derived from dredged material disposal; pay 25 percent of the project costs allocated to deep draft navigation during construction, presently estimated at $4,700,000; and pay an additional 10 percent of the project costs within a period of 30 years following completion.

STATUS OF LOCAL COOPERATION: By letter dated 6 September 1985, the Governor of New Hampshire indicated the state's intent to cooperate with the requirements of cost sharing and to contract with the Federal Government to fulfill the requirements of local cooperation for construction of the project. Formal assurance agreements, consistent with the requirements of Section 221 of the 1970 Flood Control Act and in accordance with the agreement between the Administration and the Senate majority leadership, will be requested during final design.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $14,300,000 is the initial estimate being submitted to Congress. This includes $825,000 for an estimated inflation allowance from 1 October 1985 through the construction period.

MAJOR DESIGN CHANGES SINCE PROJECT AUTHORIZATION: None.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: An Environmental Assessment and Finding of No Significant Impact was completed on 23 April 1984.

The provisions of Section 404 of the Clean Water Act are being met by a Section 404 (b)(1) Evaluation which was completed on 22 July 1982, a Public Notice issued on 18 August 1982, a Water Quality Certification and Consistency Determination issued by the State of Maine on 13 January 1984, a Water Quality/Consistency Determination provided by the New Hampshire Office of State Planning on 3 February 1984, and the Division Engineer's signature on the General Design Memorandum on 14 November 1985.

OTHER INFORMATION: Funds to initiate Continuation of Planning and Engineering (CP&E) were appropriated in FY 1983. CP&E was completed in November 1985 with the completion of the General Design Memorandum.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: New England    Project: Portsmouth Harbor and Piscataqua River, New Hampshire and Maine

| | Estimates Presented to Congress ($1,000) | | | | |
|---|---|---|---|---|---|
| Item | Original Baseline (1) | Cumulative Changes (2) | Last (3) | Incremental Change (4) | Current (5) |
| Federal Cost<br>(Price Level) | 14,300 1/ | NA | No previous estimate presented to Congress | NA | 14,300 1/ |
| Reason for Change | | | | | |
| a. Price Escalation | | | | | |
| b. Design Changes | | | | | |
| c. Additional Functions Added Under General Authority | | | | | |
| d. Authorized Modifications | | | | | |
| e. Post-Contract Award and Other Estimating Adjustments | | | | | |
| f. Schedule Changes | | | | | |
| g. Sundry | | | | | |
| h. Real Estate | | | | | |

1/ Includes 825 allowance for estimated inflation from 1 October 1985 through the construction period.

REPORTS CONTROL SYMBOL: DAEN-CWB-13

| | | | | | | |
|---|---|---|---|---|---|---|
| APPROPRIATION TITLE: CONSTRUCTION GENERAL | | | CLASSIFICATION: CHANNELS AND HARBORS (NAVIGATION) | | | |

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM | PROJECT COST ESTIMATE | TOTAL TO 30 SEP 19 85 | CURRENT FY 19 86 | BUDGET FY 19 87 | BALANCE TO COMPLETE AFTER FY 19 87 |
|---|---|---|---|---|---|---|
| | (a) | (b) | (c) | (d) | (e) | (f) |
| 1 | CHANNELS | 17,770,000 | - | - | 3,520,000 | 14,250,000 |
| 2 | ENGINEERING & DESIGN | 380,000 | - | - | 260,000 | 120,000 |
| 3 | SUPERVISION & ADMINISTRATION | 850,000 | - | - | 220,000 | 630,000 |
| 4 | | | | | | |
| 5 | TOTAL APPLIED COST | 19,000,000 | - | - | 4,000,000 | 15,000,000 |
| 6 | Undistributed Cost (None) | | | | | |
| 7 | TOTAL PROJECT COST | 19,000,000 | - | - | 4,000,000 | 15,000,000 |
| 8 | Pending Adjustments (None) | | | | | |
| 9 | TOTAL COST | 19,000,000 | - | - | 4,000,000 | 15,000,000 |
| 10 | | | | | | |
| 11 | CORPS OF ENGINEERS FUNDS | | | | | |
| 12 | TOTAL COST | 14,300,000 | - | - | 3,000,000 | 11,300,000 |
| 13 | Undelivered Orders | | | | | |
| 14 | NON-FEDERAL CONTRIBUTIONS | | | | | |
| 15 | TOTAL COST | 4,700,000 | - | - | 1,000,000 | 3,700,000 |
| 16 | Undelivered Orders | | | | | |
| 17 | TOTAL OBLIGATIONS | | - | - | 4,000,000 | 15,000,000 |
| 18 | | | | | | |
| 19 | METHOD OF FINANCING | | | | | |
| 20 | FEDERAL FUNDS (C of E Funds Only) | | | | | |
| 21 | Allocations | | - | - | | |
| 22 | Unobligated Carryover from Prior Year | | | | | |
| 23 | Total Funds Available for Obligation | | | | | |
| 24 | Appropriation Required | | | | 3,000,000 | 11,300,000 |
| 25 | NON-FEDERAL FUNDS | | | | | |
| 26 | Contributions (Cash) | | - | - | | |
| 27 | Unobligated Carryover from Prior Year | | | | | |
| 28 | Total Funds Available for Obligation | | | | | |
| 29 | Contribution Required | | | | 1,000,000 | 3,700,000 |
| 30 | | | | | | |
| 31 | | | | | | |
| 32 | | | | | | |
| 33 | | | | | | |

| | | | |
|---|---|---|---|
| EFFECTIVE DATE<br>1 JAN 1986 | DIVISION<br>NEW ENGLAND<br>DISTRICT | REGION<br>NEW ENGLAND<br>BASIN | PROJECT<br>PORTSMOUTH HARBOR & PISCATAQUA RIVER, NEW HAMPSHIRE & MAINE |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE.

APPROPRIATION TITLE: Construction, General - Beach Erosion Control

PROJECT: Revere Beach, Massachusetts (New)

LOCATION: Revere Beach is located in the City of Revere, Suffolk County, Massachusetts, approximately 7 miles north of the main entrance channel to Boston Harbor and 6 miles northeast of the City of Boston. Project consists of about 2.5 miles of ocean coastline.

AUTHORIZATION: Authorized in 1970 under Section 201 of the Flood Control Act of 1965.

BENEFIT-COST RATIO: The benefit-cost ratio is 1.3 to 1 at 8 5/8 percent. The benefit-cost ratio is based on the project functioning independently.

| SUMMARIZED FINANCIAL DATA | | Accumulated % of Est. Fed. Cost |
|---|---|---|
| Estimated Federal Cost | $5,170,000 | |
| Estimated Non-Federal Cost | 2,910,000 | |
| Cash Contribution $2,910,000 | | |
| Total Estimated Project Cost | $8,080,000 | |
| Allocations to 30 September 1985 | $ 483,000 | |
| Conference Allowance for FY 1986 | 0 | |
| Allocation for FY 1986 | 0 | |
| Allocations to Date | 483,000 | 09 |
| Allocation Requested for FY 1987 | $ 700,000 | 23 |
| Scheduled Balance to Complete After FY 1987 | 3,412,000 | |
| Unscheduled Balance to Complete After FY 1987 | 575,000 1/ | |

| STATUS (1 January 1986) | PERCENT COMPLETE | COMPLETION SCHEDULE |
|---|---|---|
| Initial Fill | 0 | Dec 1988 |
| Periodic Nourishment | 0 | Unscheduled 1/ |

PHYSICAL DATA

Beach Replenishment
Initial Beach Fill......................770,000 cy
Periodic Nourishment........To be accomplished as needed during 15-year period following initial placement.

1/ Remaining work for periodic beach renourishment is not scheduled pending determination of need.

JUSTIFICATION: Erosion of Revere Beach during frequent storms coincident with a high tide level has greatly reduced its protective effectiveness as well as its recreational use capacity. Normal high tides now approach or reach the seawalls which extend along the backshore. The specific problem is one of general erosion due principally to the advanced development of the shore. With the absence of a natural supply of replenishment sand, the project is necessary to restore and protect the existence of Revere Beach. The restored beach would prevent daily tides and annual storm waves from reaching the seawalls. The project would substantially reduce repair costs to deteriorating seawalls and reservation facilities, resulting in an estimated savings of more than $17 million over a 15-year period. It would also stabilize flood control walls subject to impending failure and reduce annual overtopping of the seawalls along the three-mile beach, thereby preventing further damage to eight historic (1895) open-aired pavilions as well as areas of improved property. Revere Beach is open to full and free use by the public and is the oldest public beach in the Nation. The location and accessibility of the area, the availability of mass transit right to the beach, the original long, wide sandy beach, and the development of a State-operated reservation have made Revere Beach the most popular and heavily-used beach in Massachusetts. The available beach area is the limiting factor as to attendance. The scarcity of natural beaches within convenient distance of the heavily populated Metropolitan and suburban areas of Boston, coupled with the trend toward increasing recreational activities such as salt water bathing, makes development of recreational beaches extremely desirable. Average annual benefits are as follows, based on 1 October 1985 prices:

| Benefit | Amount |
|---|---|
| Erosion Control | |
| Savings in seawall repairs | $868,000 |
| Recreation | 65,000 |
| Total | $933,000 |

FISCAL YEAR 1987: The requested amount will be applied as follows:

| | |
|---|---|
| Initiate beach fill | $600,000 |
| Engineering and Design | 47,000 |
| Supervision and Administration | 53,000 |
| Total | $700,000 |

NON-FEDERAL COSTS: Consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate majority leadership, local interests are required to pay 35 percent of the initial fill costs allocated to storm damage reduction, presently estimated at $2,335,000; pay one-half of the initial fill costs allocated to recreation, presently estimated at $250,000; and pay as follows for periodic nourishment costs as determined by need for a period of 15 years following construction: 35 percent of costs allocated to storm damage reduction -- an amount estimated at $20,000 annually, and 50 percent of costs allocated to recreation -- an amount estimated at $2,000 annually. Local interests have also agreed to make all required payments concurrently with project construction. In addition, local interests must assure the continued performance of the periodic nourishment and repair of the project for the remainder of the economic life of the project as may be required to serve the intended purpose, assure that water pollution that would endanger the health of bathers would not be permitted, and assure continued public ownership of the shore and its administration for public use.

STATUS OF LOCAL COOPERATION: The Metropolitan District Commission (MDC), an agency of the Commonwealth of Massachusetts, is the local sponsor for the project. By letter dated October 9, 1985, the MDC stated its intent to contract with the Federal Government to fulfill the requirements of local cooperation for construction of the project. By letter of July 27, 1984, the Governor of the Commonwealth stated his enthusiastic endorsement of the project and his support for the budget request of the MDC for its share of the project cost. Local cooperation agreements, consistent with the requirements of Section 221 of the 1970 Flood Control Act and in accordance with the agreement between the Administration and the Senate majority leadership, will be requested during final design.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $5,170,000 is an increase of $620,000 over the latest estimate ($4,550,000) submitted to Congress. This change includes a decrease of $105,000 for adjustments in the estimated inflation allowance through the construction period. There also were decreases of $250,000 resulting from the identification of a less expensive nearby source of sand and $200,000 in estimated periodic nourishment costs over a 15-year period based on lower anticipated requirements. These decreases were offset by increases of $25,000 for Engineering and Design based on effort to date and $1,150,000 for changed project cost sharing consistent with the cost sharing concepts agreed to by the Administration and the Senate majority leadership.

MAJOR DESIGN CHANGES SINCE PROJECT AUTHORIZATION: None.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: A final Environmental Impact Statement was submitted to the Council on Environmental Quality on 9 November 1970. The project remains unchanged, but because of the time lapse an Environmental Assessment was completed in August 1985.

The provisions of Section 404 of the Clean Water Act are being met by a Section 404 (b)(1) Evaluation completed in August 1985, a Public Notice issued in August 1985, a Certification anticipated to be issued by the Commonwealth of Massachusetts by October 1986, and the Division Engineer's signature on the Evaluation Report in August 1985.

OTHER INFORMATION: Initial planning funds were appropriated in FY 1973 and allotted in FY 1974. Planning was subsequently discontinued and the project reclassified to "inactive" when the local cooperative agency deferred its participation. In a letter dated 31 October 1978, local interests stated a renewed desire for the project and intention to comply with local cooperation requirements. The project was reclassified to "active" in December 1978 and funding was made available to resume design effort. Preconstruction planning will be completed in December 1986.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: New England

Project: Revere Beach, Massachusetts

| Item | Original Baseline (1) | Cumulative Changes (2) | Last (3) | Incremental Change (4) | Current (5) |
|---|---|---|---|---|---|
| | Estimates Presented to Congress ($1,000) | | | | |
| Federal Cost (Price Level) | 5,170 1/ | | | | 5,170 1/ |
| Reason for Change | | | | | |
| a. Price Escalation | | | | | |
| b. Design Changes | | | | | |
| c. Additional Functions Added Under General Authority | | | | | |
| d. Authorized Modifications | | | | | |
| e. Post-Contract Award and Other Estimating Adjustments | | | | | |
| f. Schedule Changes | | | | | |
| g. Sundry | | | | | |
| h. Real Estate | | | | | |

1/ Includes 150 allowance for estimated inflation from 1 October 1985 through the construction period.

58-198 O - 86 - 30

REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: BEACH EROSION CONTROL

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM<br>(a) | PROJECT COST ESTIMATE<br>(b) | TOTAL TO 30 SEP 19 85<br>(c) | CURRENT FY 19 86<br>(d) | BUDGET FY 19 87<br>(e) | BALANCE TO COMPLETE AFTER FY 19 87<br>(f) |
|---|---|---|---|---|---|---|
| 1 | BEACH REPLENISHMENT | 7,050,000 | - | - | 1,200,000 | 5,850,000 |
| 2 | ENGINEERING & DESIGN | 525,000 | 401,000 | 28,000 | 56,000 | 40,000 |
| 3 | SUPERVISION & ADMINISTRATION | 505,000 | 47,100 | 6,900 | 104,000 | 347,000 |
| 4 | | | | | | |
| 5 | TOTAL APPLIED COST | 8,080,000 | 448,100 | 34,900 | 1,360,000 | 6,237,000 |
| 6 | Undistributed Cost (None) | | | | | |
| 7 | TOTAL PROJECT COST | 8,080,000 | 448,100 | 34,900 | 1,360,000 | 6,237,000 |
| 8 | Pending Adjustments (None) | | | | | |
| 9 | TOTAL COST | 8,080,000 | 448,100 | 34,900 | 1,360,000 | 6,237,000 |
| 10 | | | | | | |
| 11 | CORPS OF ENGINEERS FUNDS | | | | | |
| 12 | TOTAL COST | 5,170,000 | 448,100 | 34,900 | 700,000 | 3,987,000 |
| 13 | Undelivered Orders | | +400 | -400 | | |
| 14 | NON-FEDERAL CONTRIBUTIONS | | | | | |
| 15 | TOTAL COST | 2,910,000 | | | 660,000 | 2,250,000 |
| 16 | Undelivered Orders | | | | | |
| 17 | TOTAL OBLIGATIONS | | 448,500 | 34,500 | 1,360,000 | 6,237,000 |
| 18 | | | | | | |
| 19 | METHOD OF FINANCING | | | | | |
| 20 | FEDERAL FUNDS | | | | | |
| 21 | Allocations | | 483,000 | 0 | | |
| 22 | Unobligated Carryover from Prior Year | | | 34,500 | | |
| 23 | Total Funds Available for Obligation | | | 34,500 | | |
| 24 | Appropriation Required | | | | 700,000 | 3,987,000 |
| 25 | NON-FEDERAL FUNDS | | | | | |
| 26 | Contributions (Cash) | | - | - | | |
| 27 | Unobligated Carryover from Prior Year | | | | | |
| 28 | Total Funds Available for Obligation | | | | | |
| 29 | Contribution Required | | | | 660,000 | 2,250,000 |
| 30 | | | | | | |
| 31 | | | | | | |
| 32 | | | | | | |
| 33 | | | | | | |

| EFFECTIVE DATE | DIVISION / DISTRICT | REGION / BASIN | PROJECT |
|---|---|---|---|
| 1 JAN 1986 | NEW ENGLAND | NEW ENGLAND | REVERE BEACH, MASSACHUSETTS |

ENG FORM 1 SEP 74 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE.

APPROPRIATION TITLE: Construction, General - Channels and Harbors (Navigation)

PROJECT: Jonesport Harbor, Maine (Continuing)

LOCATION: Jonesport Harbor is situated on the north side of Moosabec Reach in Washington County, Maine about 190 miles northeast of Portland, Maine, and about 40 miles southwest of the Canadian border at Eastport, Maine.

AUTHORIZATION: Authorized in 1976 under Sec 201 of the 1965 FC Act and by FY 1985 Suppl Appropriations Act (PL 99-88).

BENEFIT-COST RATIO: The remaining benefit-remaining cost ratio is 1.3 to 1 at 8 1/8%. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1985) was 1.3 to 1. The benefit-cost ratio was based on the project functioning independently.

| SUMMARIZED FINANCIAL DATA | | | | Accumulated % of Est. Fed. Cost |
|---|---|---|---|---|
| Estimated Appropriation Requirement (C of E) | | $8,850,000 | | |
| Estimated Appropriation Requirement (U.S.C.G.) | | 20,000 | | |
| Estimated Total Appropriation Requirement | | 8,870,000 | | |
| Future Non-Federal Reimbursement | | 980,000 | | |
| Estimated Federal Cost (Ultimate) | | 7,890,000 | | |
| Estimated Non-Federal Cost | | 1,960,000 | | |
| Cash Contribution | $980,000 | | | |
| Reimbursements: Comml Navigation | 980,000 | | | |
| Total Estimated Project Cost | | $9,850,000 | | |
| Allocations to 30 September 1985 | | $ 305,000 | | |
| Conference Allowance for FY 1986 | | 0 | | |
| Potential Allocation for FY 1986 | | 485,000 | | |
| Potential Allocations through FY 1986 | | 790,000 | | 09 |
| Allocation Requested for FY 1987 | | 4,700,000 | 1/ | 62 |
| Scheduled Balance to Complete After FY 1987 | | 3,360,000 | | |
| Unscheduled Balance to Complete After FY 1987 | | 0 | | |

| STATUS (1 January 1986) | PERCENT COMPLETE | COMPLETION SCHEDULE |
|---|---|---|
| Channel and Anchorage | 0 | Dec 1986 |
| Breakwater | 0 | Jun 1988 |
| Entire Project | 0 | Jun 1988 |

PHYSICAL DATA

Entrance Channel:

| Depth | Width | Length |
|---|---|---|
| 8 feet | 100 feet | 1,000 feet |

Anchorages:
Total 15 acres
6 acres at 8 feet and 9 acres at 6 feet

Breakwater:
Total length of 1,200 feet
850 feet steel cellular and 350 feet rubble-mound

1/ Obligation and expenditure of budgeted funds for construction of this project are contingent upon enactment of legislation enabling recovery of all or part of the costs to be expended by the project sponsor and the Federal government in accordance with the agreement between the Administration and the Senate majority leadership.

Division: New England

Region: New England
Jonesport Harbor, Maine

JUSTIFICATION: The basic need in Jonesport Harbor is for a protected anchorage to adequately and safely accommodate the local fishing fleet. Although the town derives some income from seasonal visitors, the principal means of livelihood is commercial fishing with its associated activities. Lobster, herring, scallops, shrimp and finfish comprise the catch made by the local fleet. Because of the exposed location of Jonesport Harbor, the growth of commercial fishing has been hampered. The fleet is exposed to storm waves from the east and southeast, resulting in damage to the fleet and lost fishing time. Severe damage is sustained during the winter from ice packs drifting through the harbor. This exposure has discouraged local interests from developing any adequate terminals from which the fishermen can operate. The State of Maine has indicated that Jonesport-Beals is one of fifteen high activity fish ports having priority fish pier needs. However, a public fish pier cannot be constructed until breakwater protection is provided. The construction of the breakwater would provide the protection necessary to correct these problems. Since Jonesport depends almost entirely upon the fishing industry for its economic existence, an adequate harbor is necessary for the economic and social well-being of the community as well as for the safety of the fishing fleet. Provision of a breakwater and sheltered anchorage will result in reduction or elimination of damages to vessels caused by rough weather and ice floes, reduction in the cost of mooring maintenance, increased fishing time gained by elimination of delays in landing the catch at Jonesport and providing new markets for the fishing resource. The Washington County labor market area which includes Jonesport qualifies for benefits from employment of previously unemployed labor resources. Project construction would aid toward alleviating the substantial and persistent unemployment. The average annual benefits for navigation improvements at Jonesport Harbor are as follows:

| Breakdown of Average Annual Benefits | Amount (1 October 1985) |
|---|---|
| Navigation | $1,007,000 |
| Employment | 34,000 |
| Total | $1,041,000 |

COMPLETED OR REMAINING MODIFICATIONS: None.

FISCAL YEAR 1987: The requested amount will be applied as follows:

| | |
|---|---|
| Complete Channel and Anchorages | $ 440,000 |
| Continue Construction of Breakwater | 3,960,000 |
| Engineering and Design | 40,000 |
| Supervision & Administration | 260,000 |
| Total | $4,700,000 |

The funds requested are required for construction during the budget year.

NON-FEDERAL COSTS: Consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate majority leadership, local interests are required to provide lands, easements, rights-of-way, and material disposal areas for initial construction and subsequent maintenance; provide, maintain and operate necessary mooring facilities and utilities including a public landing in Sawyer Cove with berthing depths alongside the landing commensurate with the entrance channel and including an adequate access road, parking area, and suitable related facilities open to all on equal terms, including transients; accomplish without cost to the United States such utility or other relocations or alterations as necessary for project purposes; reserve spaces within the harbor adequate for the accommodation of transient craft; regulate the use, growth and free development of the harbor facilities with the understanding that said facilities will be open to all on equal terms, including transients; establish regulations prohibiting discharge of pollutants into the waters of Jonesport Harbor by users thereof, which regulations shall be in accordance with applicable laws or regulations of Federal, State and local authorities responsible for pollution prevention and control; pay 10 percent of the costs allocated to shallow draft navigation during construction, presently estimated at $980,000; and pay an additional 10 percent of the costs allocated to shallow draft navigation within a period of 30 years following completion.

STATUS OF LOCAL COOPERATION: By letter dated 27 August 1985, local interests have indicated their intent to cooperate with the requirements of cost sharing and to contract with the Federal Government to fulfill the requirements of local cooperation for construction of the project. Local cooperation agreements, consistent with the requirements of the FY 1985 Supplemental Appropriations Act and Section 221 of the 1970 Flood Control Act and in accordance with the agreement between the Administration and the Senate majority leadership, will be requested during final design and are expected to be consummated before 1 June 1986.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $8,850,000 is an increase of $80,000 from the latest estimate ($8,770,000) submitted to Congress (FY 1985). This change includes increases of $650,000 based on higher price levels to 1 October 1985, $280,000 for an estimated inflation allowance from 1 October 1985 through the construction period, and $100,000 for additional borings required for final design. The change also includes a decrease of $950,000 to reflect increased non-Federal cost sharing consistent with the cost sharing concepts agreed to by the Administration and the Senate majority leadership.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: A final environmental impact statement was placed on file with CEQ on 30 April 1976. There have been no significant departures from the authorizing document. Consequently, the environmental impact statement currently on file is considered current and adequate.

The provisions of Section 404 of the Clean Water Act are being met by a Section 404(b)(1) Evaluation which was completed on 28 June 1979, a Public Notice issued on 28 September 1979, a 16 November 1979 Water Quality Certificate from the State of Maine, a Consistency Determination filed on 24 September 1979 and concurred in by the Maine State Planning Office on 9 November 1979, and the Division Engineer's signature on the Design Memorandum in December 1979.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1978, and funds to initiate construction were appropriated in FY 1985.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: New England　　　　Project: Jonesport Harbor, Maine

| Item | Estimates Presented to Congress ($1,000) | | | | |
|---|---|---|---|---|---|
| | Original Baseline (1) | Cumulative Changes (2) | Last (3) | Incremental Change (4) | Current (5) |
| Federal Cost | 8,770 | | 8,770 | | 8,850 1/ |
| (Price Level) | (Oct 1983) | | (Oct 1983) | | |
| Reason for Change | | | | (80) 1/ | |
| a. Price Escalation | | | | 930 | |
| b. Design Changes | | | | | |
| c. Additional Functions Added Under General Authority | | | | | |
| d. Authorized Modifications | | | | | |
| e. Post-Contract Award and Other Estimating Adjustments | | | | 100 2/ | |
| f. Schedule Changes | | | | | |
| g. Sundry | | | | -950 3/ | |
| h. Real Estate | | | | | |

1/ Includes 280 allowance for estimated inflation from 1 October 1985 through the construction period.

2/ Reanalysis of requirements for Engineering & Design and Supervision & Administration.

3/ Increased non-Federal cost sharing consistent with cost sharing concepts agreed to by the Administration and the Senate majority leadership.

REPORTS CONTROL SYMBOL: DAEN-CWB-13

| | |
|---|---|
| APPROPRIATION TITLE: CONSTRUCTION GENERAL | CLASSIFICATION: CHANNELS AND HARBORS (NAVIGATION) |

## SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

| LINE NO | ITEM (a) | PROJECT COST ESTIMATE (b) | TOTAL TO 30 SEP 19 85 (c) | CURRENT FY 19 86 (d) | BUDGET FY 19 87 (e) | BALANCE TO COMPLETE AFTER FY 19 87 (f) |
|---|---|---|---|---|---|---|
| 1 | CHANNELS | 720,000 | - | 230,000 | 490,000 | |
| 2 | BREAKWATER | 8,000,000 | - | 130,000 | 4,400,000 | 3,470,000 |
| 3 | CULTURAL RESOURCES PRESERVATION | 25,000 | - | 25,000 | | |
| 4 | ENGINEERING & DESIGN | 475,000 | 208,700 | 191,300 | 40,000 | 35,000 |
| 5 | SUPERVISION & ADMINISTRATION | 610,000 | 31,500 | 63,500 | 290,000 | 225,000 |
| 6 | | | | | | |
| 7 | TOTAL APPLIED COST | 9,830,000 | 240,200 | 639,800 | 5,220,000 | 3,730,000 |
| 8 | Undistributed Cost (None) | | | | | |
| 9 | TOTAL PROJECT COST | 9,830,000 | 240,200 | 639,800 | 5,220,000 | 3,730,000 |
| 10 | Pending Adjustments (None) | | | | | |
| 11 | TOTAL COST | 9,830,000 | 240,200 | 639,800 | 5,220,000 | 3,730,000 |
| 12 | | | | | | |
| 13 | CORPS OF ENGINEERS FUNDS | | | | | |
| 14 | TOTAL COST | 8,850,000 | 240,200 | 549,800 | 4,700,000 | 3,360,000 |
| 15 | Undelivered Orders | | | | | |
| 16 | NON-FEDERAL CONTRIBUTIONS | | | | | |
| 17 | TOTAL COST | 980,000 | - | 90,000 | 520,000 | 370,000 |
| 18 | Undelivered Orders | | | | | |
| 19 | TOTAL OBLIGATIONS | | 240,200 | 639,800 | 5,220,000 | 3,730,000 |
| 20 | | | | | | |
| 21 | METHOD OF FINANCING | | | | | |
| 22 | FEDERAL FUNDS (C of E Funds Only) | | | | | |
| 23 | Allocations | | 305,000 | 485,000 | | |
| 24 | Unobligated Carryover from Prior Year | | | 64,800 | | |
| 25 | Total Funds Available for Obligation | | | 549,800 | | |
| 26 | Appropriation Required | | | | 4,700,000 | 3,360,000 |
| 27 | NON-FEDERAL FUNDS | | | | | |
| 28 | Contributions (Cash) | | - | 90,000 | | |
| 29 | Unobligated Carryover from Prior Year | | | | | |
| 30 | Total Funds Available for Obligation | | | 90,000 | | |
| 31 | Contribution Required | | | | 520,000 | 370,000 |
| 32 | | | | | | |
| 33 | | | | | | |

| | | | |
|---|---|---|---|
| EFFECTIVE DATE<br>1 JAN 1986 | DIVISION<br>NEW ENGLAND<br>DISTRICT | REGION<br>NEW ENGLAND<br>BASIN | PROJECT<br>JONESPORT HARBOR, MAINE |

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE.

## NEW ENGLAND DIVISION
## JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

1. Navigation

a. Channels and Harbors.

The program request of $10,669,000 provides for essential maintenance work on 4 channel and harbor projects named in the list which follows. The work to be accomplished under this activity consists of maintaining the navigation channels and harbors and anchorages of coastal harbors and waterways by means of dredging, snagging, breakwater repairs, and the operation and repair of project structures, all as authorized in the laws adopting river and harbor projects.

| | OBLIGATIONS | | | |
|---|---|---|---|---|
| Project | Actual FY 1985 | Estimated FY 1986 | Estimated FY 1987 | Explanation of Major Changes |
| | $ | $ | $ | |
| Connecticut | | | | |
| Connecticut River below Hartford | 147,200 | 1,440,000 | 1,668,000 | Variation in dredging. |
| Massachusetts | | | | |
| Cape Cod Canal | 6,422,100 | 5,388,000 | 8,570,000 | Repair bulkhead FY 85; repair railroad bridge FY 87. |
| Green Harbor | 249,200 | 201,000 | 191,000 | Variation in dredging. |
| New Hampshire | | | | |
| Rye Harbor | 0 | 0 | 240,000 | Periodic dredging. |

## NEW ENGLAND DIVISION
## JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

1. Navigation (Cont'd)

a. Channels and Harbors. (Cont'd)

| Project | OBLIGATIONS<br>Actual<br>FY 1985<br>$ | <br>Estimated<br>FY 1986<br>$ | <br>Estimated<br>FY 1987<br>$ | Explanation of Major Changes |
|---|---|---|---|---|
| Other Projects Maintained Periodically | 957,300 | 1,616,000 | | |
| Total - Channels and Harbors | 7,775,800 | 8,645,000 | 10,669,000 | |
| b. Locks and Dams | None | | | |
| TOTAL - NAVIGATION | 7,775,800 | 8,645,000 | 10,669,000 | |

2. Flood Control

a. Reservoirs

The program request of $9,579,000 provides for the operational requirements of 31 flood control reservoirs. Requirements include: operation and ordinary maintenance of project facilities; labor, supplies, materials and parts required for day-to-day functioning; periodic maintenance, repairs and replacements; and contract law enforcement.

Connecticut

| | | | | |
|---|---|---|---|---|
| Black Rock Lake | 162,900 | 219,000 | 159,000 | Seal roads and parking lot and prepare flood emergency plan FY 86. |

## NEW ENGLAND DIVISION
## JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

2. Flood Control (Cont'd)

a. Reservoirs. (Cont'd)

| Project | OBLIGATIONS Actual FY 1985 $ | Estimated FY 1986 $ | Estimated FY 1987 $ | Explanation of Major Changes |
|---|---|---|---|---|
| Connecticut (Cont'd) | | | | |
| Colebrook River Lake | 151,300 | 166,000 | 197,000 | Instrument dam FY 87. |
| Hancock Brook Lake | 95,900 | 110,000 | 79,000 | Prepare inundation maps FY 85; prepare flood emergency plans FY 86. |
| Hop Brook Lake | 377,300 | 395,000 | 421,000 | |
| Mansfield Hollow Lake | 244,000 | 270,000 | 300,000 | Review embankment design FY 86; install outlet drains FY 87. |
| Northfield Brook Lake | 156,800 | 178,000 | 113,000 | Perform crest survey and water quality study FY 85; remove sediment, conduct periodic inspection and dam failure study, FY 86. |
| Thomaston Dam | 588,700 | 457,000 | 204,000 | Repair seepage FY 85; paint bridges, repair spillway, conduct dam failure study FY 86. |
| West Thompson Lake | 319,100 | 452,000 | 348,000 | Conduct periodic inspection, repair road and replace storage building FY 86. |

## NEW ENGLAND DIVISION
## JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

2. Flood Control (Cont'd)

a. Reservoirs. (Cont'd)

| Project | OBLIGATIONS<br>Actual FY 1985<br>$ | Estimated FY 1986<br>$ | Estimated FY 1987<br>$ | Explanation of Major Changes |
|---|---|---|---|---|
| **Massachusetts** | | | | |
| Barre Falls Dam | 420,100 | 479,000 | 305,000 | Remove rock from channel and replace heating system FY 85; replace septic system and permanent operating equipment and seal roads FY 86. |
| Birch Hill Dam | 237,600 | 286,000 | 309,000 | Paint floodgates FY 86; replace fence FY 87. |
| Buffumville Lake | 313,800 | 308,000 | 308,000 | |
| Charles River Natural Valley Storage Areas | 149,700 | 338,000 | 166,000 | Boundary rectification and monumentation FY 86. |
| Conant Brook Lake | 63,200 | 181,000 | 142,000 | Clear channel, replace riprap and conduct dam failure study FY 86; repair culvert and access road and instrument dam FY 87. |
| East Brimfield Lake | 198,200 | 283,000 | 302,000 | Replace generator and conduct dam failure study FY 86; repair storage building and access road FY 87. |
| Hodges Village Dam | 351,200 | 380,000 | 316,000 | Boundary monumentation FY 86. |

## COST SHARING AGREEMENTS

Mr. **Bevill**. The three projects in the construction category, Portsmouth Harbor, New Hampshire and Maine, Revere Beach, Massachusetts and Jonesport Harbor, Maine can all be classified as new. My question is, do you have any binding, cost sharing agreements on any of these projects?

Colonel **Rhen**. No, sir, we do not right now. We are in the process of negotiating with Jonesport officials on cost sharing. We have not initiated that process on Portsmouth or Revere yet.

Mr. **Bevill**. Do you anticipate any problem with getting cost sharing on any one of the projects?

Colonel **Rhen**. No, sir, we do not. We have an indication of full support for all of the projects.

Mr. **Bevill**. Do you have any flexibility on the local cost sharing part, how much it would be?

Colonel **Rhen**. No, sir. The cost sharing is pretty well defined as to what the Federal part would be and what the local part would be.

Mr. **Bevill**. How much is it?

Colonel **Rhen**. First, sir, on the Portsmouth Harbor project, that would be a cost sharing of 65 percent Federal and 35 percent local. On Revere Beach, it is a little bit different. It is basically a storm damage prevention project, but there is a little bit of recreation associated with it, and the figure works out to a 64 percent Federal, 36 percent local; and then for the Jonesport Harbor project, because the depths in Jonesport Harbor are not as deep as Portsmouth, it would be an 80–20 Federal cost sharing versus local split.

## WEST CENTRAL CONNECTICUT COASTAL STUDY

Mr. **Bevill**. Describe the purpose of the West Central Connecticut Coastal Flooding study which is proposed for initiation in FY 1987.

Colonel **Rhen**. The purpose of the West Central Connecticut Coastal Flooding study is to determine the feasibility of providing structural and nonstructural solutions to alleviate flooding problems in this area. The study area is comprised of the eight communities of Westport, Fairfield, Bridgeport, Stratford, Milford, West Haven, New Haven and East Haven. Flooding along this coastal reach is caused by high tide levels which are induced by ocean storm surges and wind driven waves accompanying hurricanes and coastal storms.

Our reconnaissance-level effort, for which the funds are requested, will concentrate on four specific areas: the definition of potential solutions; the determination of whether planning should proceed based on a preliminary appraisal of the Federal interest, costs and benefits of those solutions; an estimate of the cost of the feasibility phase if planning is to continue; and finally, the completion of a contract with the study sponsor to share in the feasibility study costs.

### WESTFIELD RIVER, MASSACHUSETTS

Mr. **Bevill**. What alternatives are being considered in connection with providing flood control along the Westfield River?

Colonel **Rhen**. Flood control alternatives being considered for the Westfield River Basin include a tunnel to bypass flood flows from the City of Westfield; the modification of existing dams, including our Knightvilie Dam, to provide additional flood control storage; and the possible construction of a new dam and local protection works including channel improvement.

### SOUTHEASTERN NEW ENGLAND STUDY

Mr. **Bevill**. In connection with the Southeastern New England study, describe your findings regarding higher tidal flooding which resulted from hydrologic modeling studies.

Colonel **Rhen**. Hydrologic modeling studies were undertaken to resolve significant discrepancies in flood level data we were getting for the 1978 and other floods throughout the study area. Gaging stations were installed to calibrate a numerical model developed by the Corps' Waterway Experiment Station. Results of the model studies indicated that flood levels resulting from storms would be 1 to 3 feet higher than we originally anticipated. These higher levels of flooding have a significant impact on the feasibility of larger, more comprehensive barrier plans.

### NEW HAVEN HARBOR, CONNECTICUT

Mr. **Bevill**. Describe the New Haven Harbor, Connecticut study which is budgeted for initiation of the continuation of planning and engineering in FY 1987.

Colonel **Rhen**. The proposed improvements for the New Haven Harbor as recommended in the Chief of Engineers Report provide for deepening the main ship channel from 35 to 40 feet over a length of about 7 miles, widening the ship channel from 400 feet to 500 feet over a distance of 4 miles, widening the ship channel bend at Southwest Ledge from 560 feet to a minimum of 780 feet, straightening the channel bend downstream of the extisting turning basin, and revising the configuration of the existing 35-foot deep turning basin to provide a common, smaller 40-foot turning basin.

Our continuation of planning and engineering efforts being initiated in FY 1987 involve development of a General Design Memorandum. We will also be evaluating further the impacts that project implementation will have on the oyster beds and oyster production in New Haven Harbor. This will include the planning of mitigation measures.

### BRISTOL HARBOR, RHODE ISLAND

Mr. **Bevill**. With regard to the Bristol Harbor, Rhode Island project, how are the "Reduced Damages to Shore Facilities" annual benefits totaling $40,000 determined?

Colonel **Rhen**. Damage estimates were made by interviewing those affected by storms and obtaining information on historic repairs and maintenance. The Prudence Island Ferry has had its sand-filled pier washed out several times. Two fish wholesalers suffer damages annually due to the fact that they are exposed to the open water. Estimated annual damage prevention benefits to these facilities are $18,200. In addition, the U.S. Coast Guard Pier sustains physical damages during storms and they take costly measures to avoid damage to their 180-foot buoy tender and other smaller vessels by sending their boats to Mount Hope bay or Greenwich Cove in East Greenwich, Rhode Island, where they wait out the storm. Damages to the pier include replacement of the timber piles, repairing the concrete deck, granite wells and service utilities. The annual damage prevention benefits for this area are estimated to be $21,800.

### OPERATION AND MAINTENANCE BACKLOG

Mr. BEVILL. Your O&M request for FY 1987 is about the same as FY 1986. Do you have a backlog of needed O&M work?

Colonel RHEN. Nothing of a major or critical nature, sir. There may be some minor items that the budget may not allow us to get to, but I do not consider us to have any backlog of needed O&M work.

### RAILROAD BRIDGE REPAIRS, CAPE AND COD CANAL

Mr. BEVILL. What is the nature of the railroad bridge repairs at the Cape Cod Canal, Massachusetts, proposed for FY 1987?

Colonel RHEN. The major items of work will be the overhaul and replacement of the main counterweight cables and bearings, providing cable vibration-eliminating devices, the replacement of the electrical control system, and the cleaning and painting of the structural steel.

### KNIGHTVILLE DAM SAFETY STUDY

Mr. BEVILL. I note you have budgeted funds for a dam safety study at Knightville Dam in Massachusetts in FY 1987. Are these studies scheduled on a regular basis—or how do you determine which dams need to be studies?

Colonel RHEN. No, sir, this is not a periodic activity subject to recurring scheduling. The dam safety study noted for the Knightville Dam is an evaluation of the dam's intake tower to see if it can withstand earthquake forces. This stability analysis is required to reflect the latest design criteria and seismic values for the project area.

This represents our intial effort in conducting this type of stress analysis of a dam's intake structure. Knightville was selected because site specific earthquake response data is available from earlier dynamic studies of the dam's embankment and foundation. Dynamic response stress analyses are new and criteria is still evolving. Consequently, the results of our study at Knightville and at Franklin Falls Dam in New Hampshire for which a like study will be done for the same reason, will provide us with valuable engineering knowledge which will guide our decisions relative to the extent of future studies and their related schedules.

Mr. BEVILL. Mr. Myers.

Mr. **Myers**. Thank you, Mr. Chairman.

### NEW CONSTRUCTION STARTS

Colonel, welcome. I guess as you come back over the next several years, we will be here to greet you as you return. Our job here is sometimes only two years at a time. Yours is generally of a little longer duration. In the new starts category, Portsmouth Harbor would be the only new start, I believe, and that is subject, of course, to authorization. Am I correct on that?

Colonel **Rhen**. From a construction standpoint, both Portsmouth Harbor and Revere Beach are new starts.

Mr. **Myers**. Revere Beach is a new start?

Colonel **Rhen**. Yes, sir, that's correct.

Mr. **Myers**. Revere Beach is authorized, isn't it?

Colonel **Rhen**. Yes, sir, it is.

Mr. **Myers**. I thought you had already started that.

Colonel **Rhen**. No, sir, we have not had construction funds on that.

### PROJECTS INCLUDED IN AUTHORIZATION BILL

Mr. **Myers**. Do you know how many projects you have in the H.R. 6, which is now over at the other body, the new authorization bill?

Colonel **Rhen**. Yes, sir. I think there are five projects, but I would like to confirm that for the record.

Mr. **Myers**. All right, put it in the record.

[The information follows:]

#### PROJECTS INCLUDED IN AUTHORIZATION BILL H.R. 6

The following New England Division projects are included in the authorizaton bill H.R. 6 that is currently before the Congress:

Portsmouth Harbor and Piscataqua River, New Hampshire and Maine—deep draft navigation improvement

Roughans Point, Revere, Massachusetts—local flood protection

Town Brook, Quincy and Braintree, Massachusetts—local flood protection

Big River Reservoir, Rhode Island—multiple purpose dam and reservoir (water supply and flood control)

New Haven Harbor, Connecticut—deep draft navigation improvement

### SHORELINE EROSION

Mr. **Myers**. You have a large population, maybe not quite as large a land mass as a lot of areas, but you have a lot of shoreline there. Do you have a lot of erosion along the shoreline?

Colonel **Rhen**. In some areas, yes, sir. You get into the areas where you have more sand and more gradual shoreline, coastal areas that don't have rocky coasts, you do get some erosion as compared to some of the more rocky areas where erosion is not quite as prevalent.

Mr. **Myers**. A lot of your shoreline, as I recall, is rocky. I wondered if erosion was much of a problem.

Colonel **Rhen**. It is in some areas, sir.

## NEW ENGLAND DIVISION
## JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

2. Flood Control (Cont'd)

a. Reservoirs. (Cont'd)

| | OBLIGATIONS | | | |
|---|---|---|---|---|
| Project | Actual FY 1985<br>$ | Estimated FY 1986<br>$ | Estimated FY 1987<br>$ | Explanation of Major Changes |
| Massachusetts (Cont'd) | | | | |
| Knightville Dam | 353,200 | 307,000 | 356,000 | Repair outlet FY 85; dam safety study FY 87. |
| Littleville Lake | 250,800 | 402,000 | 267,000 | Instrument dam and repair drainage FY 86. |
| Tully Lake | 373,700 | 496,000 | 308,000 | Paint gates and remove rock from channel FY 85; install hydroelectric generator and resurface roads FY 86. |
| West Hill Dam | 214,800 | 360,000 | 225,000 | Remove rock from channel, repair bridge, conduct periodic inspection and dam failure study FY 86. |
| Westville Lake | 376,000 | 446,000 | 345,000 | Remove rock from channel, repair restroom, conduct dam failure study, repaint gates and install curbing FY 86. |
| New Hampshire | | | | |
| Blackwater Dam | 194,300 | 384,000 | 299,000 | Repair access road, instrument dam and replace permanent operating equipment FY 86; replace permanent operating equipment and update drawings FY 87. |

## NEW ENGLAND DIVISION
## JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

2. Flood Control (Cont'd)

a. Reservoirs. (Cont'd)

| Project | OBLIGATIONS<br>Actual FY 1985<br>$ | Estimated FY 1986<br>$ | Estimated FY 1987<br>$ | Explanation of Major Changes |
|---|---|---|---|---|
| New Hampshire (Cont'd) | | | | |
| Edward MacDowell Lake | 240,300 | 412,000 | 342,000 | Paint bridges, repair restroom and parking area and review embankment design FY 86; resurface access road and instrument dam FY 87. |
| Franklin Falls Dam | 562,100 | 459,000 | 564,000 | Complete seismic study FY 85; repair bridge FY 87. |
| Hopkinton-Everett Lakes | 569,400 | 818,000 | 731,000 | Replace permanent operating equipment, paint bridges and clear channel FY 86; replace gatehouse roof, refurbish restrooms and conduct periodic inspection FY 87. |
| Otter Brook Lake | 401,200 | 301,000 | 391,000 | Repair bridges FY 85; install rock protection FY 87. |
| Surry Mountain Lake | 393,800 | 367,000 | 408,000 | Repair slump area and restrooms FY 87. |

## NEW ENGLAND DIVISION
## JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

2. Flood Control (Cont'd)

a. Reservoirs. (Cont'd)

| Project | OBLIGATIONS<br>Actual<br>FY 1985 | <br>Estimated<br>FY 1986 | <br>Estimated<br>FY 1987 | Explanation of Major Changes |
|---|---|---|---|---|
| | $ | $ | $ | |
| **Vermont** | | | | |
| Ball Mountain Lake | 586,600 | 543,000 | 341,000 | Repair control panel and replace permanent operating equipment FY 85; conduct embankment study FY 86. |
| North Hartland Lake | 330,300 | 298,000 | 248,000 | Repair parking lot FY 85; instrument dam and replace permanent operating equipment FY 86. |
| North Springfield Lake | 818,500 | 440,000 | 439,000 | Repair seepage and install piezometers FY 85. |
| Townshend Lake | 674,700 | 503,000 | 337,000 | Repair seepage and install piezometers FY 85; repair side slopes, repair roads and replace storage building FY 86. |
| Union Village Dam | 252,100 | 331,000 | 309,000 | Conduct embankment review FY 86; repair bridge FY 87. |
| Total - Reservoirs | 10,421,600 | 11,369,000 | 9,579,000 | |

## NEW ENGLAND DIVISION
## JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

2. Flood Control (Cont'd)

b. Channel Improvements, Inspections and Miscellaneous Maintenance.

The program request of $504,000 provides for the maintenance requirements of 2 hurricane flood protection projects and for inspection of 70 completed projects.

| Project | OBLIGATIONS<br>Actual FY 1985<br>$ | <br>Estimated FY 1986<br>$ | <br>Estimated FY 1987<br>$ | Explanation of Major Changes |
|---|---|---|---|---|
| Connecticut | | | | |
| Stamford Hurricane Barrier | 227,700 | 183,000 | 118,000 | Repair and realign navigation gate FY 85; replace control house furnace and repair pump FY 86. |
| Massachusetts | | | | |
| New Bedford, Fairhaven & Acushnet Hurricane Barrier | 230,000 | 130,000 | 132,000 | Condition survey FY 85. |
| Inspection of Completed Works | 210,800 | 290,000 | 242,000 | Variation in inspection levels. |
| Inspection of Completed PL-99 Works | 0 | 0 | 12,000 | Periodic Inspection. |
| Total - Channel Improvements, Inspections and Miscellaneous Maintenance | 668,500 | 603,000 | 504,000 | |
| TOTAL - FLOOD CONTROL | 11,090,100 | 11,972,000 | 10,083,000 | |

## NEW ENGLAND DIVISION
## JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

3. Multiple Purpose Power Projects None.

4. Protection of Navigation

The program request of $4,509,000 provides for accomplishing the work essential to the administration and enforcement of specific laws enacted for the protection of navigation particularly Section II, River and Harbor Act of 1899, Sections 402 and 404 of FWPCA Amendment of 1972; Section 103 of Marine Protection Research and Sanctuary Act of 1972 involving the issuance and review of permits for discharges into navigable waters; and Project Condition Surveys.

| | OBLIGATIONS | | | |
|---|---|---|---|---|
| Project | Actual FY 1985 | Estimated FY 1986 | Estimated FY 1987 | Explanation of Major Changes |
| | $ | $ | $ | |
| General Regulatory Functions | 3,475,400 | 3,527,000 | 2,915,000 | Disposal site designation studies FY 85 and FY 86. |
| Project Condition Surveys | 1,487,200 | 1,856,000 | 1,594,000 | Variation in survey levels. |
| TOTAL - PROTECTION OF NAVIGATION | 4,962,600 | 5,383,000 | 4,509,000 | |
| GRAND TOTAL - NEW ENGLAND DIVISION | 23,828,500 | 26,000,000 | 25,261,000 | |

### FLOODING PROBLEMS

Mr. **Myers**. You don't have the flooding problem that some areas have. You don't hear about it quite as much.

Colonel **Rhen**. We do have some flooding problems, but because of the geographics of New England, the geography, the topography, some of our projects aren't as big and so we take care of many of our local flooding problems through the continuing authorities program.

### MUNICIPAL WATER SUPPLY

Mr. **Myers**. With the exception of Long Island, is there a shortage of municipal water?

Colonel **Rhen**. Not that I am aware of. I know, for instance, last summer some of the water supply reservoirs in the region were low, as they were throughout all of that region of the country. We have since had a fair amount of rainfall and a reasonably good snowfall so far this winter, so that water reservoirs appear to be reasonably close to normal level. I think the biggest problem, for instance, with the Metropolitan Boston area would be with the distribution system, as opposed to quantity of water available in the reservoirs.

### HYDROPOWER

Mr. **Myers**. We have talked in the past about the consideration of some existing old dams being used for hydropower. What is the status of your study on those?

Colonel **Rhen**. We had studied a number of those for hydropower. We are looking at two of our Corps projects for hydropower that will be utilized for our own Corps projects, but basically we have pretty well limited our study on hydropower in the recent past.

### DAM SAFETY

Mr. **Myers**. Along with that, the existing dams, some which were built by the communities and some by industries are still in existence there, what is the status of your dam safety program?

Colonel **Rhen**. We have completed quite a bit of work in the dam safety arena for our completed projects. From a dam safety standpoint, we have now installed crest monuments at all of our dams. Through 1987 we will have completed flood emergency plans for all of our dams, completed structural review of 23 out of 31 dams, and installed piezometers at 24 of our dams.

Mr. **Myers**. Installed what?

Colonel **Rhen**. Piezometers. These are basically instruments that measure the water level in the embankment.

Mr. **Myers**. We nonengineer types—I haven't heard that word used before.

### LONG ISLAND SOUND DREDGED MATERIAL CONTAINMENT

You mentioned that dredged material containment in Long Island Sound is neither economically nor environmentally sound, and that locals oppose it. What is the alternative?

Colonel **Rhen**. Well, sir, while there is a controversy surrounding disposal of dredged material, there is an overriding general acceptance of current disposal options, namely open water disposal at four designated sites and land disposal whenever possible. Findings of our study revealed that under present conditions containment does not offer a feasible alternative for the disposal of dredged material in Long Island Sound and, in general, containment does not compete favorably with other disposal options. However, such a finding does not rule out the need for others to continue consideration of containment on a case by case basis. This study has concluded that evaluation factors of economics, environment and public support rule out widespread reliance on containment for disposal of dredged material.

Mr. **Myers**. Thank you very much. We look forward to working with you in the future. You are doing a good job. You have a great area.

Mr. **Bevill**. Keep up the good work. Representative Conte of Massachusetts has submitted some questions for which we would like you to supply the answers for the record.

Colonel **Rhen**. Yes, sir, I would be delighted to.

[Questions and answers follow:]

## Questions Submitted by Congressman Conte

### MILLERS RIVER, ATHOL, MASSACHUSETTS

*Question*. The Corps was recently very helpful in regulating the water level in the Millers River to avert a potential disaster in Athol, Massachusetts. This seems to be a recurring problem, and the Athol Selectman have asked me to pursue the possibility of a longer term solution to the problem, including channel deepening. Is this something that the Corps could look into?

Answer. Yes, the Corps could certainly look into this problem to determine if there are any long term solutions. I am aware of the area along the Millers River to which you are referring. I will have one of my staff get in touch with the Athol Selectmem to see what we can do.

### NAVIGATION ON THE CONNECTICUT RIVER

*Question*. The Corps recently completed its study of navigation on the Connecticut River. Could you briefly outline the benefits and costs analyzed by that study, and explain why no further action is indicated by your analysis?

Answer. Benefits expected to accrue from extension of navigation above Hartford were evaluated relative to current and anticipated future conditions. Waterway users were inventoried and interviewed, an assessment of navigation needs was made and estimated transportation costs with project improvements implemented were determined. Savings from existing costs, or benefits, were then determined and are established to be $4,679,000 annually. Opportunities to meet local recreational needs were considered and the benefits were estimated to be $1,652,000 annually. Hydropower benefits, developed in coordination with the Connecticut Energy Office, were estimated to be $17,300,000 annually.

Costs were developed based on conceptional designs of the authorized project. Significant features include a lock and dam at Hartford, a lock, dam and powerhouse at Enfield and dredging from Hartford to Holyoke. The estimated project cost is $289,000,000. When you look at this cost on an annual basis over fifty years and include operation, maintenance and major replacement costs, you have an estimated average annual cost of $32,500,000.

Comparing the estimate of annual benefits and costs yields a benefit-cost ratio of 0.7 to 1. Since the benefit-cost ratio is less than unity, we have determined that sufficient potential economic benefits do not exist to warrant further Federal study.

### TWO-WAY TRAFFIC ON THE CONNECTICUT RIVER

*Question.* Some supporters of the Connecticut River navigation project have charged that the Corps took insufficient notice of the potential benefits to be derived from the project, including the possibility of two-way traffic on the River rather than the empty barge back-hauls contemplated by the Corps study. Could you comment on those charges?

Answer. Potential benefits from large back-hauls depend on four factors: the activity of the entity that receives the primary haul; the commodity received and type of barge used; barge rates versus alternative model rates; and future development in the area.

Our study identified the potential waterway users as receivers who are either the ultimate consumers or local distributors of the commodities they would receive by barge. No shippers were found in the area. The receiving activities include electric power generation and distribution of home heating oil and motor fuels.

The types of commodities received utilize different types of barges which prevent cross-use for back-hauls. Typical commodity/barge pairings are: tank barge with number two distillate and gasoline; coiled tank barges with number four and number six residual out; double skin barges with chemicals; open hopper with coal; covered hopper with rock salt and cement; and deck barges with containers.

Bulk commodities and containers are the most applicable to back-hauls. However, no bulk shippers could be found in the study area and direct truck service is still less costly than barging for container movements.

A survey of 38 public and private groups indicated that future industrial development in the study area would not be of the type that would encourage barge services. The groups included local and regional planning agencies, State government agencies, development corporations, economic research firms and real estate firms. Therefore, as a result of all these factors, future use of primary and back-hauls was precluded.

### STREAMBANK EROSION

*Question.* The Corps has reviewed a streambank erosion problem on the west bank of the Housatonic River in Pittsfield, Massachusetts. This problem involves private land, located near some work that the Corps had done previously on the west branch. Is it true that the Corps does not have authority to assist with an erosion problem of this sort involving private land? Do you have any other suggestions of where we might look for assistance?

Answer. The Corps does not have the authority to provide streambank protection to privately owned properties. We are authorized to investigate erosion problems that endanger public works or public use facilities. We do provide information to individuals on what measures they could undertake. I am not aware of any other Federal agency that would be able to assist with this problem.

### REGULATION OF LAKE LEVELS

*Question.* One of the issues that arose last year was the regulation of lake levels in western Massachusetts to accommodate recreational users of lake facilities. Is it your intention to try to accommodate such users as much as possible? Could you outline your policy on scheduling maintenance and related activities in order to reach such accommodation?

Answer. We not only try to accommodate, but promote, as much recreational use of our lake facilities as possible. For example, we provide special releases at many of our reservoirs to provide white water canoeing opportunities. There are times, however, particularly during the spring, when we are required to withhold releases for flood control purposes which cause the lake levels to rise a little higher than some fishermen desire; but we do try to minimize these inconveniences. Our policy on scheduling maintenance and related activities is also geared to minimizing impacts on recreational use. Whenever possible, we schedule these activities during periods of minimal use.

## CONNECTICUT RIVER ABOVE HARTFORD AND TRUMBULL LAKE INVESTIGATIONS RESULTS

Mr. Bevill. I would also ask if you would provide to the Committee for the record a brief summary of the investigations that you conducted for the Connecticut River and Trumbull Lake projects that you mentioned in your opening status report.

Colonel **Rhen**. Yes, sir, I would be happy to.

[The information follows:]

Name of Project: CONNECTICUT RIVER ABOVE HARTFORD, CONNECTICUT AND MASSACHUSETTS

Authority: This investigation was directed by the House Report accompanying the 1984 Energy and Water Development Appropriations Act, which states, "Within available funds the Corps of Engineers is directed to develop an updated economic analysis of the authorized navigation project on the Connecticut River between Hartford, Connecticut and Holyoke, Massachusetts. The analysis shall include a review of existing information concerning the potential for commercial benefits of the project. The analysis shall also include an estimate of the cost of constructing the project as authorized. The purpose of the analysis is to make a preliminary determination of whether sufficient potential economic benefits exist to warrant further study of the project."

Authorized Project: The Connecticut River above Hartford project was authorized by the River and Harbor Act of July 3, 1930 and modified by the act of August 30, 1935. The project provides for a channel 12 feet deep at mean low water and generally 100 feet wide from Hartford to Holyoke, a distance of 32.5 miles. The project calls for construction of a lock and dam near Hartford, the construction of a lock and dam at Enfield Rapids, and the dredging of the river to provide the necessary depth. No work has been done to date.

Updated Economic Analysis of Authorized Project: The study focused on examining the feasibility of constructing the authorized project considering current economic and future conditions.

Costs were developed based on conceptual designs of the authorized project. The cost of the project, based on 1985 price levels, is estimated at $289 million exclusive of any real estate or mitigation requirements. Annual charges including interest during construction, operation, maintenance, and major replacements would be about $32.5 million. Project costs by major features are shown below.

Project Costs
(1985 Price Levels)

| Feature | Cost |
|---|---|
| Hartford Lock and Dam | $ 52,000,000 |
| Dredging Hartford to Enfield | 24,500,000 |
| Enfield Lock, Dam & Powerhouse | 175,300,000 |
| Dredging Enfield to Holyoke | 37,200,000 |
| TOTAL | $289,000,000 |

Benefits expected to accrue from the extension of navigation above Hartford were reevaluated relative to current and anticipated future conditions. A consultant firm was hired to inventory and interview waterway users, assess navigation needs in the study area, and determine estimated transportation costs with project improvements implemented. Savings from existing costs were then determined.

A survey of potential users of the riverfront was conducted. Navigation needs were found to be oriented toward recreation and other environmentally compatible uses. Development generating extensive monetary benefits would not be expected since ample pipeline, rail and truck services exist for the types of commodities expected to be moved during the next 50 years in the study area. Opportunities to meet local recreational needs were considered and benefits determined. Hydropower benefits were developed in coordination with the Connecticut Energy Office. Total benefits, on an annual basis, attributable to the project are shown below.

Annual Benefits
(1985 Price Levels)

| Category | Benefits |
|---|---|
| Commercial Navigation | $ 4,679,000 |
| Hydropower | 17,300,000 |
| Recreational Boating | 1,652,000 |
| TOTAL | $23,631,000 |

Comparing the current estimate of annual benefits and costs yields a benefit-to-cost ratio of 0.7 to 1.

Conclusion: Sufficient potential economic benefits do not exist to warrant further Federal study at this time.

Name of Project: TRUMBULL LAKE, CONNECTICUT

Authority: This investigation was directed by the Conference Report accompanying the Fiscal Year 1984 Supplemental Appropriations Act of November 15, 1983, which states, "Within available funds the Corps of Engineers is directed to initiate studies of alternatives to the authorized Trumbull Lake Project in Fairfield County, Connecticut, including a review of problems and opportunities and formulation and evaluation of flood damage reduction plans. The Corps should also consider other values which may be achieved under alternative plans and consult with local governmental officials in the formulation of the alternatives."

Location of Study Area: The Pequonnock River is a small coastal stream located in Fairfield County in southwestern Connecticut. The Pequonnock River is formed by the East and West Branches which originate in the town of Monroe, Connecticut and join just north of the Monroe-Trumbull town line. From there, the Pequonnock River flows south through Trumbull and Bridgeport, Connecticut to Bridgeport Harbor. Throughout its 9.6-mile length to tidewater, the main stem of the Pequonnock River falls about 300 feet in a series of relatively flat reaches connected by steep, rocky rapids and falls. The Pequonnock River Basin has a total drainage area of 28.3 square miles. The study area encompasses the entire Pequonnock River Basin.

Dates of Corps Reports:

a. Appraisal Report: N/A.

b. Reconnaissance Report: August 1985.

Problems and Opportunities Identified: The heavily developed communities of Trumbull and Bridgeport have had a history of flooding from the Pequonnock River, the largest of which occurred in August 1955. Following this event, studies of flooding conditions along the Pequonnock River were initiated which determined the feasibility of constructing a multi-purpose reservoir about a mile upstream of Daniels Farm Road Bridge in Trumbull. This project, referred to as Trumbull Lake, was designed to control runoff from about 50 percent of the Pequonnock River Watershed and provide a high degree of protection to flood prone areas in Trumbull and Bridgeport. Trumbull Lake was also designed to provide storage for water supply, water quality and recreation.

The Trumbull Lake Project was authorized by the Flood Control Act of 1966. Advanced engineering and design was conducted during 1967 and 1968. Funds to initiate construction were allotted in 1971. However, in the process of obtaining formal assurances, the State of Connecticut withdrew its support for the project due to unacceptable aesthetic, environmental, economic and social impacts. Upon notification of the State's position, all activity ceased and the project was placed in the "inactive" category on 24 April 1973.

As a result of severe flooding along the Pequonnock River during January 1978, April 1980 and June 1982, the State of Connecticut indicated it would support the Trumbull Lake project if it continued to be economically sound and requested its reactivation on 7 October 1982. Restudy of the Trumbull Lake Project determined that it is not economically justified under existing conditions as shown below.

TRUMBULL LAKE PROJECT

| PURPOSE | ALLOCATED FIRST COST | ANNUAL COST | ANNUAL BENEFITS | BENEFIT-TO-COST RATIO |
|---|---|---|---|---|
| Flood Control | $ 6,429,000 | $ 654,000 | $ 213,000 | 0.33 to 1 |
| Water Supply | 15,700,000 | 1,559,000 | 1,232,000 | 0.80 to 1 |
| Recreation | 1,996,000 | 211,000 | 175,000 | 0.83 to 1 |
| TOTAL PROJECT | $24,125,000 | $2,424,000 | $1,620,000 | |

When notified that the Trumbull Lake Project was no longer justified, State and local officials requested the Corps to investigate other flood damage reduction measures. This report presents the results of our investigation of alternatives to the authorized, but never constructed, Trumbull Lake Project.

Through hydrologic analysis of the Pequonnock River and coordination with Trumbull and Bridgeport officials, four flood prone areas were identified within the basin. These areas are described in the following paragraphs.

Area I — Area I is located in Bridgeport and extends from about 500 feet downstream of Bunnells Pond Dam to Roosevelt Street Bridge. The Pequonnock River is conveyed through most of this very flat reach in conduits extending beneath North Avenue and a large shopping complex. The lower portion of this reach is tidal. Flood prone development within Area I includes 79 commercial properties and 1 condominium complex. Annual flood losses are estimated to equal $374,000 in this area. If a flood similar in magnitude to the 1955 event (2 percent chance) were to occur under existing development conditions, approximately $5.9 million in losses would result.

Area II — Area II is located in Trumbull about 900 feet upstream of Trumbull Road Bridge. Flood prone development in this area is comprised of 17 single family homes, only 2 of which have first floors below the estimated 100-year flood level. Annual losses for this reach were estimated to equal $13,900.

Area III — Area III is located in Trumbull just upstream of White Plains Road. The Pequonnock River is very flat and has a wide flood plain through this reach, with many small interconnecting bodies of water. The level of these small ponds is governed by the level of the Pequonnock River, which fluctuates several feet with changes in riverflow. The flood plain in this area is populated with 1 gas station and approximately 40 single family homes made up mostly of ranches with a few split entries, tri-levels and capes. About half of the homes in this area would experience first floor flooding during the 100-year event. Total annual losses for Area III are estimated to equal $43,300.

Area IV — Area IV is located in Trumbull just downstream of Daniels Farm Road Bridge. The flood plain in this area contains a mix of 3 commercial and 20 residential properties. The 3 commercial properties are part of the shopping complex located along the west bank of the Pequonnock River. The residential properties are single family homes located along Manor Drive, Daniels Farm Road, and Pequonnock Road. Many of these homes are ranches with walk-out basements. Annual flood losses were estimated to equal $56,800 in this reach.

Annual flood losses were estimated for each of the four areas and are summarized below.

SUMMARY OF ANNUAL FLOOD LOSSES

| Area | Estimated Annual Flood Losses |
|---|---|
| I | $374,000 |
| II | 13,900 |
| III | 43,300 |
| IV | 56,800 |
| TOTAL | $488,000 |

Alternative Plans Considered: During reconnaissance investigations, several alternatives to reduce losses in flood prone areas of Trumbull and Bridgeport were considered. The following table summarizes the formulation of benefit-to-cost ratios for the various alternative plans investigated.

SUMMARY OF ALTERNATIVES

| Plan | First Cost | Annual Cost | Annual Benefit | B/C Ratio |
|---|---|---|---|---|
| RESERVOIR | | | | |
| Trumbull Lake | $24,125,000 | $2,424,000 | $1,620,000 | 0.67 to 1 |
| Bunnells Pond | (Insufficient flood storage capacity) | | | |
| TUNNEL | | | | |
| Area I | 7,000,000 | 596,900 | 186,000 | 0.31 to 1 |
| Areas II, III & IV | (not a viable alternative) | | | |
| CHANNEL MODIFICATIONS | | | | |
| Area I | 4,000,000 | 341,100 | 190,000 | 0.60 to 1 |
| Area II | 1,250,000 | 106,600 | 9,900 | 0.10 to 1 |
| Area III | 2,250,000 | 191,800 | 40,900 | 0.21 to 1 |
| Area IV | 2,400,000 | 204,600 | 41,700 | 0.20 to 1 |
| NONSTRUCTURAL MEASURES | | | | |
| Area I | (not a viable alternative) | | | |
| Area II | 800,000 | 68,200 | 9,900 | 0.15 to 1 |
| Area III | 2,900,000 | 247,300 | 23,100 | 0.10 to 1 |
| Area IV | 1,500,000 | 127,900 | 48,700 | 0.38 to 1 |

Conclusion: All of the flood damage reduction measures investigated during this study were determined to lack economic justification. Further study of flooding conditions along the Pequonnock River in Trumbull and Bridgeport, Connecticut is, therefore, unwarranted.

Other options available to the town of Trumbull and city of Bridgeport to help reduce or mitigate flood losses along the Pequonnock River are flood insurance, tax abatements and limiting the use of flood prone basements to movable items. In addition, these communities and the State of Connecticut should consider the replacement of restrictive bridges, especially the Merritt Parkway Bridge, to help reduce backwater flooding.

Mr. **Bevill.** Mr. Rudd.

Mr. **Rudd.** Thank you, Mr. Chairman. I don't have any questions. Thank you, Mr. Chairman.

Mr. **Bevill.** Thank you very much. This committee stands adjourned until 10:00 o'clock tomorrow.

TUESDAY, MARCH 4, 1986.

## DELAWARE RIVER BASIN COMMISSION

### WITNESSES

**GEORGE J. KANUCK, UNITED STATES COMMISSIONER**
**GERALD M. HANSLER, EXECUTIVE DIRECTOR**
**DAVID McCULLOUGH, BUDGET ANALYST, FISCAL SERVICES, DEPARTMENT OF THE INTERIOR**

## SUSQUEHANNA RIVER BASIN COMMISSION

### WITNESSES

**WARNER M. DEPUY, UNITED STATES COMMISSIONER, WASHINGTON, D.C.**
**ROBERT J. BIELO, EXECUTIVE DIRECTOR, HARRISBURG, PENNSYLVANIA**

## INTERSTATE COMMISSION ON THE POTOMAC RIVER BASIN

### WITNESSES

**PAUL W. EASTMAN, EXECUTIVE DIRECTOR**
**ROCKWOOD H. FOSTER, CHAIRMAN**

Mr. BEVILL. We will have the Delaware River Basin Commission, Susquehanna River Basin Commission, and Interstate Commission on the Potomac River Basin.

Mr. DEPUY. It is nice to see you back and looking so well.

Mr. BEVILL. Well, thank you. I am delighted to be back, and I am feeling great.

I am going to call on each of you for a brief statement.

Mr. DEPUY. Mr. Chairman, and members of the subcommittee, I am Warner M. Depuy, United States Commissioner of the Susquehanna River Basin Commission, and again it is a real pleasure to appear before this committee.

Accompanying me, and on my immediate right, is Mr. Robert J. Bielo, the Executive Director of the Commission. Also with me, right in back of me, is Mr. David McCullough, Division of Fiscal Services, Office of the Secretary of the Interior Department, who advises and assists my office on budget matters.

I appear before you today, and I do it in dual capacity, in support of two appropriation items, totaling $419,000. The first consists of $179,000 for salaries and expenses for my office, and the second of $240,000 for the Federal share of the Susquehanna Commission's $1,522,500 expense budget.

Both Mr. Bielo and I prepared formal statements for the record, and we hope we are prepared to respond to any questions which you may have.

Thank you very much, sir.

[Prepared statements of Mr. Depuy and Mr. Bielo follow:]

## STATEMENT OF WARNER M. DEPUY, UNITED STATES COMMISSIONER, SUSQUEHANNA RIVER BASIN COMMISSION, BEFORE THE SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT, COMMITTEE ON APPROPRIATIONS, IN SUPPORT OF THE FISCAL YEAR 1987 APPROPRIATION REQUESTS FOR SALARIES AND EXPENSES, OFFICE OF THE UNITED STATES COMMISSIONER, AND FOR THE FEDERAL CONTRIBUTION TO THE SUSQUEHANNA RIVER BASIN COMMISSION

Mr. Chairman and Members of the Committee: Again, it is a pleasure to appear before you. I do this in a dual capacity, in support of the appropriation request for salaries and expenses for the Office of the United States Commissioner and also for the Federal contribution to the Susquehanna River Basin Commission.

This Federal-Interstate Compact Commission was established pursuant to Public Law 91-575 among the States of Maryland and New York, the Commonwealth of Pennsylvania, and the Federal Government. The Compact serves as the vehicle to produce the most efficient service in the public interest in the conservation, utilization, development, management and control of the water resources of the Basin.

The Commission's membership consists of the Governors of the signatory states, or their appointed designees, and a Federal Member appointed by the President to represent all Federal Agencies. Historically, the Federal Member has been the Secretary of the Interior. In addition, each Governor and the President are directed to appoint a Commissioner to serve as alternate to the Member with identical powers of the Member, including the power to vote in the absence of the Member. The non-Federal staff of the Commission receives direction from the Members of the Commission through their alternates.

The duties of the Federal Member and the United States Commissioner are to represent the interests of the Federal Government on the Commission and to protect the national interests in the water resource development programs for the Susquehanna River Basin. To accomplish this, the Member and the Commissioner must work closely with all interested Federal Departments and Agencies, serving as coordinators to assure that Federal interests are fully informed regarding all water resources development programs for the Susquehanna River Basin. They also represent Federal interests in all actions by the Commission relating to the comprehensive plan and the advisability of individual water resource policies, programs, and projects which the Commission may propose or consider.

### SALARIES AND EXPENSES

An appropriation of $179,000 for fiscal year 1987 is requested to finance salaries and expenses necessary to enable the United States Commissioner to carry out his responsibilities to protect the Federal Government's interests in the Susquehanna River Basin. This is a $16,000 increase from the level appropriated by the Congress for fiscal year 1986.

### CONTRIBUTION TO SUSQUEHANNA RIVER BASIN COMMISSION

A request of $240,000 is to provide for the Federal Government's share of the $1,522,500 current expense budget of the Commission, and is a $10,000 increase from the level appropriated by the Congress for fiscal year 1986. The current expense budget covers expenses of the staff and the regular operating programs of the Commission.

### IMPACT OF GRAMM-RUDMAN-HOLLINGS

As a result of P.L. 99-177, we have received a reduction of $7,000 for my office and a $10,000 reduction in the contribution to the Commission in this fiscal year.

Mr. Bielo, the Executive Director of the Commission, is accompanying me today and has submitted a statement to the Committee which briefly outlines some of our achievements. We will be happy to answer any questions you have regarding the Commission's current activities and new program initiatives proposed for fiscal year 1987.

## STATEMENT OF ROBERT J. BIELO, EXECUTIVE DIRECTOR, SUSQUEHANNA RIVER BASIN COMMISSION, BEFORE THE SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT, COMMITTEE ON APPROPRIATIONS

Mr. Chairman and Members of the Committee: On behalf of the Susquehanna River Basin Commission, I want to express our appreciation for this opportunity to appear before you today to outline our programs, highlighting items we believe to be of greatest concern and to request your support for the proposed Federal share of the Commission's fiscal year 1987 operating budget.

The Commission's programs are directed to address the major areas of water resource management and development that are defined and described in the Federal-Interstate Compact (P.L. 91-575). During the 14 years of operation, the Commission has expended the major portion of its funds on three program areas: flood plain management, water supply and water quality.

In fiscal year 1986, a high level of effort is being directed toward coordination of efforts to expand and improve the National Weather Service flood warning and forecasting system in the Basin. I would take this opportunity to express our members' appreciation to the Congress for including funds in the National Weather Service budget to initiate this much needed program.

The importance of timely and accurate flood forecasts cannot be over emphasized, especially in a river basin which has a flood history and damage record such as that of the Susquehanna. A substantial portion of our fiscal year 1987 budget will be used in continuing programs designed to extend self-help flood damage reduction programs to flood prone communities and vulnerable industries.

While vulnerability to flooding is a continuing threat to the people and economy of the Susquehanna River Basin, the problems of drought and failing water supplies have been occurring with increased frequency.

Fortunately, drought events do not come about in a matter of hours or days as do floods. In view of this, the Commission has initiated a number of long-range programs designed to deal with future droughts and recurring water supply problems. Drought management plans, expanded groundwater monitoring and model development for critical aquifers, reservoir management programs and subbasin framework plans for water supply management on upstream watersheds are major elements of this portion of the Commission's program.

One added example of the Commission's overall water supply program is the continuing effort toward development of water supply storage at Cowanesque Lake, a Federal flood control-recreation project in Pennsylvania. Special studies regarding this project that were required by the Compact, and additional studies requested by the State of New York have been completed. The findings, which were favorable, were reviewed at a public hearing in December 1985 and adopted by the Commission in public session February 13, 1986.

The Cowanesque project provides a unique opportunity for the Army Corps of Engineers and the Susquehanna Commission to develop an existing project to include, at nominal cost to the Federal Government, needed water supply storage and expanded recreation at an upstream location in the Basin.

The project will provide to the Federal Government a very substantial level of cost return on its original investment, plus a portion of future project O&M costs. The Commission for its part will obtain water supply storage in an environmentally sound and cost effective manner.

The Commission and Corps staff are working toward final draft contracts for the project. Beyond the staff level of action, the Commission has agreed to upfront payment of the costs to modify the project and proposed to pay the Federal Government 100% of the original construction costs allocated to water supply, plus interest determined as described in the Water Supply Act of 1958 and P.L. 99-88. If this proposal is acceptable to the Secretary of the Army, the Commission would over the period of the contract return approximately $75 million to the Federal Treasury. With continuing effort on all sides, the Commission expects to have a fully executed contract between the Secretary of the Army and the Susquehanna Commission in place before June 30, 1986, in accordance with the requirements of P.L. 99-88.

The Environmental Protection Agency's Chesapeake Bay Study completed in 1983 identified the Susquehanna River Basin as a major source of nutrients to the Bay. In response, the Commission as a part of its water quality program developed and implemented a plan for monitoring suspended sediment and nutrient loadings in the Susquehanna River and selected tributaries. Under the plan, monthly baseflow samples and storm runoff samples are collected from 13 sites. The samples are analyzed and the data are forwarded to Pennsylvania and to EPA for use in planning best management practice programs and modifying the existing Chesapeake Bay tributary model.

In another program, the Commission annually undertakes a Water Quality and Biological Survey of a major subbasin. The findings are published and serve the States and EPA in planning future water quality programs. In fiscal year 1986, the Commission implemented a toxic screening program in conjunction with its surface and groundwater monitoring effort. This program will be continued through fiscal year 1987.

The effort to restore runs of anadromous fish, namely American shad, to the Susquehanna River continues as a goal of the signatories to the Susquehanna Compact. The Commission remains as an active participant in this long-standing effort.

To close, this report briefly notes the general direction of Commission programs and highlights efforts we believe are of national as well as regional interest. The Commission respectfully requests your support for the proposed Federal share of its fiscal year 1987 operating expenses in the amount of $240,000 as indicated in the President's budget.

Mr. **Bevill**. Mr. Kanuck.

Mr. **Kanuck**. Mr. Chairman, members of the committee. It is again my pleasure to appear here before you this year.

I appear before you in support of two appropriation items totaling $385,000. These items consist of $185,000 for salaries and expenses for the operation of the Office of the United States Commissioner, and $200,000 for the Federal contribution to the Delaware River Basin Commission to implement the compact.

In the interest of time the detailed explanation of these requests appears in the justification statement, and in my formal statement, which were submitted to the committee previously.

### FEDERAL CONTRIBUTION

However, I would like to share with you the factors which influence the decision to seek $75,000 less for the Federal contribution from last year's appropriation.

The Commission has developed a proposed budget that has not as yet gone to public hearing. That budget reflects the Federal contribution as $289,000, a figure that is simply an arbitrary five percent increase over the 1986 fiscal year Federal appropriation. The budget is not based on specific decisions by the Commission relative to the cost of carrying out pre-planned program objectives or defined and demonstrated needs.

Furthermore, the Commission has at its disposal in undesignated fund reserves approximately $745,000, which could be drawn upon to support any critically-defined need.

Finally, I should point out that the total Federal funds provided to the Commission in fiscal year 1986 by way of the Federal contribution and projected grants, represent a 33 percent increase in such funds over the fiscal year 1985 level.

The proposed fiscal year 1987 Federal contribution of $200,000, when combined with the proposed $240,000 Federal water quality grant from EPA, totals $440,000, and represents far more than the $289,000 proposed by the State Commissioners as the Federal fair-share contribution. The combining of these two Federal figures is important for comparison purposes since State contributions to the Commission already include their portions of the proposed EPA water quality grant.

Also, the Commission stands a good chance of having made available to it in fiscal year 1987 a $100,000 grant from NOAA for the second year of seasonal disinfection studies, for which it provided initial funds in 1986. If those funds are added to the combined proposed Federal contributions and the EPA grant, Federal funding for the Commission will exceed total funding provided by each of three of the four signatory States.

In summary, although the fiscal year 1987 Federal contribution being sought represents a reduction from last year's appropriation, it is fair and equitable if all Federal monies going to the Commission are taken into consideration.

Mr. Hansler, the Executive Director of the Commission, is to my left, and I am sure you are familiar with him. He is here by request of the State Commissioners to present a statement.

I will defer to him, if I may.

[Prepared statement of Mr. Kanuck follows:]

## STATEMENT OF GEORGE J. KANUCK, UNITED STATES COMMISSIONER, DELAWARE RIVER BASIN COMMISSION, BEFORE THE SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT, COMMITTEE ON APPROPRIATIONS, IN SUPPORT OF THE FISCAL YEAR 1987 APPROPRIATION REQUESTS FOR SALARIES AND EXPENSES, OFFICE OF THE UNITED STATES COMMISSIONER, DELAWARE RIVER BASIN COMMISSION, AND FOR THE FEDERAL CONTRIBUTION TO THE DELAWARE RIVER BASIN COMMISSION

Mr. Chairman and Members of the Committee: It is a pleasure for me to appear before you again today. I appear before you today in support of the Fiscal Year 1987 appropriation requests for salaries and expenses for the Office of the United States Commissioner and also for the Federal Contribution to the Delaware River Basin Commission.

The Delaware River Basin Commission was created by compact among the States of Delaware, New Jersey, New York, the Commonwealth of Pennsylvania, and the Federal Government (Public Law 87-328). Utilizing the authorities of the compact, the signatory parties participate jointly in managing the conservation, utilization, and development of the water and related land resources of the region.

The Commission's membership consists of the Governors of the signatory states and a Federal Member appointed by the President to represent all Federal agencies. The Federal Member historically has been the Secretary of the Interior. In addition, the President and each Governor appoint an alternate with identical powers of the Member, including the authority to vote in the absence of the Member. The staff of the Commission is comprised of non-Federal employees and receives its direction from the Members and Alternates through the Executive Director.

The duties of the Federal Member and the United States Commissioner are to represent the interests of the Federal Government in the deliberations of the Commission and to protect the national interests in the water resources development programs for the Delaware River Basin. To accomplish this, the Member and the Commissioner work closely with all concerned Federal departments and agencies, keeping them fully informed, coordinating their views, and representing their interests in all Commission decisions relating to the Delaware River Basin Comprehensive Plan (the Commission's primary regulatory tool) and the advisability of individual water resources policies, programs, and projects which the Commission may propose or consider.

### SALARIES AND EXPENSES

An appropriation of $185,000 is requested for Fiscal Year 1987 to provide for the operating expenses of the Office of the United States Commissioner for the Delaware River Basin Commission, i.e., the salary of the United States Commissioner and an assistant, plus incidental expenses relating to personnel benefits, travel, supplies, and other support services. This budget request is $17,000 more than the appropriation enacted for Fiscal Year 1986.

### CONTRIBUTION TO DELAWARE RIVER BASIN COMMISSION

A request of $200,000—a decrease of $75,000 from last year's appropriation—is to provide the Federal Government's share of the $2,110,200 current expense budget for the Delaware River Basin Commission. The current expense budget covers expenses of carrying out the regular operating programs of the Commission as described in the Justifications statement previously submitted to the Committee.

The reduction of $75,000 from the F.Y. 1986 appropriation is the result of taking into consideration all Federal monies going to the Commission, regardless of purpose or source—an approach long followed by the States. For instance, in F.Y. 1986 the Commission will have the following Federal funds available to it: a proposed basic contribution of $275,000; a basic water quality grant from EPA of $240,000;

additional grants from EPA totaling $75,000 for DRBC's well registration program; grants totalling $300,000 from NOAA for water quality work in addition to that being conducted with the EPA grant; and $131,000 from other Federal sources to conduct work that has been requested by Federal agencies or to provide water monitoring. It is assumed most of these programs will carry over into F.Y. 1987 and be funded in part by Federal grants. In light of the magnitude of this Federal funding—$1,021,000—it is felt $200,000 is an equitable Federal fair share contribution to the Commission's F.Y. 1987 general operating budget.

### IMPACT OF GRAMM-RUDMAN-HOLLINGS

As a result of P.L. 99-177, there will be a reduction of $7,000 in the Fiscal Year 1986 Salaries and Expenses budget and a $12,000 reduction in the Federal Contribution.

Mr. Chairman, accompanying me today is David McCullogh, the Interior Department budget analyst who assists my Office on budgetary matters. We will try to respond to any questions you may have regarding the budget requests.

Also here today is Mr. Gerald Hansler, Executive Director of the Commission, who has been directed by the State members of the Commission to appear before the Committee.

Mr. **Bevill**. Mr. Hansler, you may proceed.

Mr. **Hansler**. I have a written statement, but there are some things stated by the Federal Commissioner that were not included in his earlier prepared statements that I think are important and deserve a reaction. I will do it briefly.

Mr. **Bevill**. All right.

### F.E. WALTER PROJECT

Mr. **Hansler**. First, the Commission supports what is in the Corps budget for modification of the F. E. Walter project. We also agree to up-front financing. We also agree to a higher non-Federal cost share, from 67 percent up to about 88 percent. We are doing this, recognizing the plight of the Federal Treasury.

### GENERAL OPERATING BUDGET

Insofar as our general operating costs, they are just that. Many of the programs of which the Federal Commissioner speaks are single-purpose projects funded outside our current operating budget. They don't include additional resources or personnel for the Commission's regular programs. We are down from 52 people to 38. We often receive requests from Federal agencies to do different things, including input into GAO audits and other special programs. And, simply put, the Governors through their Commissioners from the four states have said the proposed fair share for the Federal Government this year as an equal partner for our operating program, not special projects, is $289,000.

Several of the signatory parties right now pay much more than that. In the past, Mr. Chairman, you have asked: why is it the State shares continue to go up percentage-wise, and the Feds remain flat? For the past five years that amount is about 22 percent in State contributions, and if Gramm-Rudman goes through—and we are willing to take the Gramm-Rudman cut—the Feds will have been flat. It is interesting. In the past we had trouble with New York State funding. Now we see basically an arbitrary cutback of $89,000, from a $289,000 level as recommended by the Federal Commissioner. Simply, we can't afford it. We hope the Federal

Government, under the spirit of the Compact, remains a partner. Not a big brother, but certainly not a weak brother.

We are at the point where we are trying to modify the DRBC Compact to remove a grandfather clause which prohibits us from charging pre-Compact water users to pay for post-Compact projects, even though they may benefit from those projects. We are doing this to come up with a user-pay program. At the same time, it seems unconscionable that the Federal representative would say, "and we are going to cut your resources back further. We are going to limit your capability to perform what Congress says must be done in the compact, plus meet the new cost restraints, plus meet our water supply needs in the basin."

I hope this committee will look favorably upon the $289,000 appropriation. There is one other river basin commission in the country where the Federal Government did not merely ratify a compact, but joined the Federal Government as an equal partner—that's the Susquehanna.

I believe this year their request is up from last year. We are not asking for an increase—a great increase. We are asking for what we feel is a fair share to make up for the increased costs that we have to operate the Commission without any increase in personnel.

Thank you.

Mr. BEVILL. We will certainly take your request under consideration.

[Prepared statement of Mr. Hansler follows:]

# STATEMENT OF GERALD M. HANSLER, EXECUTIVE DIRECTOR, DELAWARE RIVER BASIN COMMISSION, BEFORE SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT, COMMITTEE ON APPROPRIATIONS

Mr. Chairman and Members of the Committee:

Thank you for this opportunity to comment on elements of the Administration's fiscal year 1987 budget request concerning the Delaware River Basin Commission, as well as our own proposed DRBC budget.

First, we are pleased that the Corps of Engineers has included in their fiscal year 1987 Civil Works budget request:

- $3,000,000 towards the initial phases of construction for the Francis E. Walter Reservoir Project, and
- $1,000,000 for advanced engineering and design for Prompton Lake Project.

The Delaware Commission has requested Congress to modify the Federal Reservation section of our Compact, Section 15.1(b), by removing the "grandfather" clause which now prevents the Commission from charging pre-Compact water users for the cost of post-Compact projects -- even though those projects would provide benefits to pre-Compact users. Congressman William Hughes has introduced the necessary legislation on the House side and Senator Bill Bradley in the Senate. With modification of Section 15.1(b), we feel that a revised, but fair and equitable, water sales program can be adopted which will provide the revenue stream necessary to repay interest and principal on bonds, O&M, and associated project costs. As you know, the Corps is now requiring up-front dollars to cover the non-Federal share of multipurpose reservoir projects.

The Commissioners to the DRBC are in accord regarding the Federal cost-sharing arrangement for the F. E. Walter Project, even though our non-Federal share (percentage) is now significantly greater than originally authorized by Congress in H.D. 522 (88.6% vs. 67.8%). Based upon an estimated project cost of $112,800,000 for the F. E. Walter Project, this amounts to a Federal savings of $23,500,000.

Though the State Commissioners directed me, at our Commission meeting last Wednesday, to support the Corps projects, they also directed me to testify before this Subcommittee regarding our proposed current expense budget for fiscal year 1987.

Specifically, the four state commissioners believe that the Federal contribution towards our current expense budget should be $289,000, as set forth in our proposed fiscal year 1987 budget -- not the $200,000 requested by the U. S. Commissioner on page 11 of his budget justification document.

When Gramm-Rudman-Hollings reductions take effect, we will take our lumps along with everyone else in the country. But, to begin with an arbitrary and unfair line item reduction of 30% ($89,000) and then be further impacted by Gramm-Rudman-Hollings, this would cripple our ability to perform. Over the past four fiscal years, the states' contribution to our current expense budget -- exclusive of special projects -- has risen by 22%, while the Federal share has risen but 2%. The state members to the Commission are assuming a bigger share of the budget to operate this relatively small-sized federal-interstate agency.

The United States Commissioner's stated reason for further cutting the Federal "fair share" to our current expense budget is that DRBC receives additional grants from other Federal agencies. The two grants cited on page 11 of the justification:

- NOAA grant for seasonal disinfection study in Delaware Estuary
- EPA Region II grant for well registration in New York and New Jersey

are one-time, special purpose grants which do not constitute part of our current expense budget and which do not add one single employee to our personnel roster. These special project tasks are performed by others via contracts with the Commission.

The Corps of Engineers, Environmental Protection Agency, Fish and Wildlife Service, U. S. Geological Survey, and other Federal agencies rely upon the Commission for on-going and day-to-day services, as well as special tasks when the need arises. An adequate core unit must be maintained by the Commission to realize the purposes set forth in the Compact which created the Delaware Commission. Congress didn't merely ratify an interstate water management agreement between the four states in 1961, they joined the United States to that Compact as an equal partner.

The states have been assuming a greater share of our current expense budget over the last several years and are proposing to do so again for fiscal year 1987. However, I hope and do request on behalf of the signatory states to the Delaware Commission that this Committee will include the figure of $289,000 for the Federal contribution to the Commission's fiscal year 1987 budget -- not the $200,000 figure requested by the United States Commissioner.

x x x

Extension of remarks of Gerald M. Hansler, Executive Director, Delaware River Basin Commission re the March 4, 1986 Appropriations Hearing concerning the Delaware River Basin Commission.

Commission staff prepared responses to the written questions numbers (4) and (5) posed by the Subcommittee Chairman, and passed them along to the Federal Commissioner's office. Below are Commission staff responses (probably different from those rendered by the Federal Commissioner) for written question number (3).

3. On page 6 you say in reference to additional Federal funds available to the Commission, "it is assumed most of these programs will carry over in FY 87....."
What happens if these additional Federal programs are not funded at all, or at a reduced rate?

Answer.

a) Current Expense Budget. A reduction of $89,000 from DRBC's proposed Federal fair share from FY 87 could reduce our permanent staff by 3 positions. This would weaken our already reduced work force during a period when the DRBC is seeking the implementation of new initiatives, one of which is to develop a new, fair and equitable water sales program to generate revenues for up-front financing of Corps of Engineers water supply projects. The Commission has shown a willingness to accept the Administration's new up-front financing and increased non-federal cost sharing guidelines. Our staff resources should not be crippled in this endeavor.

b) The basic water quality grant authorized under the Clean Water Act for state and interstate agencies (of which the DRBC is one) will probably be reduced for this FY 86 as a result of Gramm-Rudman. So, we expect to receive less than $240,000 for our annual EPA water quality grant for FY 86 which will further stress us moving into FY 87. State and interstate water quality grants for FY 87 will also probably be reduced.

c) The additional groundwater grant from EPA of $75,000 was a one-time grant for a special purpose and will not be renewed in FY 87. No additional manpower was employed to carry out the purposes of this project. All monies received will go out on contract. The U.S. Geological Survey fully endorsed this project as necessary for sound groundwater management, although they contributed no dollars. In fact, the DRBC is subsidizing the U.S.G.S. to work on groundwater efforts in the basin.

d) The grant from NOAA is similarly a one-time special purpose grant to augment our estuary seasonal disinfection study -- endorsed by the U.S. E.P.A., U.S. Fish and Wildlife, Basin States, and, of course, NOAA itself. It provides for no new DRBC positions. Incidentally, the grant amount is $200,000, not the $300,000 stated by Commissioner Kanuck. We have been informed by NOAA that we will not receive additional funds in FY 87. Major municipalities in the basin are contributing more than NOAA for this effort.

e) The $131,000 mentioned by Mr. Kanuck from other Federal sources "to conduct work that has been requested by Federal agencies or to provide water monitoring" is received by the Commission mostly from non-federal sources and the DRBC in turn gives this money to Federal agencies such as the U.S.G.S.. This is not money used in DRBC's current operating budget for permanent staff.

f) In summary, the amount of dollars given to the DRBC in annual fair share contribution will probably be less than the $275,000 appropriated because of Gramm-Rudman; and the amount we receive from our annually entitled EPA water quality grant will also probably be reduced for the same reason.

Regarding Commissioner Kanuck's verbal remark at the hearing that the DRBC...."has at its disposal in undesignated fund reserves approximately $745,000, which could be drawn upon to support any critically-defined need...", that is totally incorrect. This figure was actually $745,064 as stated in the DRBC annual independent audit report and consisted of General funds totalling $222,064 and Special Project Funds totalling $523,000 -- funds not to be tapped for general purposes. DRBC's present undesignated or unappropriated general fund balance as of March 7, 1986 was $77,064, not the $222,064 available on June 30, 1985. It is important to point out that some reasonable fund balance is necessary to pay our bills -- especially when a signatory party becomes a "slow payer".

In summary, the "fair share" contribution of $289,000 proposed for the Federal Government is needed as a minimum to carry out our current operating programs as laid out in our Annual Water Resources Program and as summarized by Commissioner Kanuck on pages 7-9 of his "Delaware River Basin Commission Budget Justification; FY 1987". Special, one-time, projects which do not add personnel to our regular operating program should not be confused with our current operating budget. This Commission has a history of encumbering monies in special project funds to complete those special projects, and not commingle them with current operating funds.

Mr. BEVILL. The Chair recognizes Mr. Foster.

Mr. FOSTER. Mr. Chairman, I will submit my testimony for the record in the interest of time.

I have two points to make extemporaneously, if I may.

One—of course as you know—this is the water all of us drink. It is on the table. It is what the Springfielder in Virginia drinks, and the President drinks. So it is of importance to the Federal Government, what is done to the Potomac River.

The East Coast had drought restrictions, if you will remember, this past year, except in one place. We had no water restrictions here in the Washington area. And this is because of the cooperative water management system which this commission has put into place, known colloquially as the "low-flow allocation."

We want to continue this for next year. Without the cooperative management system we do not know what the fate of the water supply will be here next year.

We are sure, if our system continues, that none of us sitting in this room will be short of water.

One other thing I should like to mention, which is important. Our river is crossed by bridges, it has railroads going up and down the river, and it has pipelines going under it. Any one of these things can spill toxic chemicals into our drinking water supply.

We are doing the studies for each of the four States and the District of Columbia, on what is called the "time of transit," if a poison gets into the river. So that the Corps of Engineers could know when to open and close the water intakes for the District of Columbia, and the other entities, the utilities of Maryland of Virginia could do likewise. This work is important and it needs to be done.

We are asking you, sir, for $79,000 this year, which is the same as last year.

I hope you will grant this.

Mr. BEVILL. Will the $79,000 accomplish what you have in mind.

Mr. FOSTER. Yes, sir.

Mr. BEVILL. Thank you for your presentation.

[Prepared statement of Mr. Foster follows:]

# STATEMENT BEFORE THE SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT, COMMITTEE ON APPROPRIATIONS U.S. HOUSE OF REPRESENTATIVES

BY

ROCKWOOD H. FOSTER, CHAIRMAN

INTERSTATE COMMISSION ON THE POTOMAC RIVER BASIN (ICPRB)

MARCH 4, 1986

THANK YOU, MR. CHAIRMAN, FOR THIS OPPORTUNITY TO SUPPORT THE FISCAL YEAR 1987 FEDERAL APPROPRIATION FOR THE INTERSTATE COMMISSION ON THE POTOMAC RIVER BASIN. MY NAME IS ROCKWOOD FOSTER. I AM THE CHAIRMAN OF THE COMMISSION AND ONE OF THREE COMMISSIONERS APPOINTED BY THE MAYOR OF THE DISTRICT OF COLUMBIA. I HAVE WITH ME, PAUL EASTMAN, EXECUTIVE DIRECTOR OF THE COMMISSION.

THE PRESIDENT'S FISCAL YEAR 1987 BUDGET RECOMMENDED NO APPROPRIATION FOR ICPRB. WE REQUESTED $79,000 AS THE FAIR FEDERAL SHARE OF THE TOTAL BUDGET OF $775,000. THE $79,000 IS THE SAME AMOUNT AS THE APPROPRIATION FOR THE CURRENT FISCAL YEAR.

THE ICPRB INCLUDES TWO COMMISSIONERS APPOINTED BY PRESIDENT REAGAN. THE THIRD OF HIS APPOINTED COMMISSIONERS RESIGNED DUE TO THE PRESS OF PERSONAL BUSINESS, BUT WE UNDERSTAND AN APPOINTMENT TO FILL THE VACANCY IS IN PROCESS. THE PRESIDENTIALLY-APPOINTED COMMISSIONERS REPRESENT THE INTERESTS OF THE FEDERAL GOVERNMENT, ONE OF THE LARGEST WATER USERS AND RIPARIAN LANDOWNERS ON THE RIVER. THE FEDERAL SHARE HISTORICALLY HAS BEEN EQUAL TO THE LARGEST OF THE REQUESTED

STATE CONTRIBUTIONS, WHICH IS FROM MARYLAND. IT IS TANGIBLE EVIDENCE OF THE FULL AND EQUAL FEDERAL PARTNERSHIP IN A VITAL JOINT MISSION.

APPROPRIATION AUTHORITY

THE AUTHORITY FOR THE FEDERAL APPROPRIATION TO ICPRB IS ARTICLE IV OF THE POTOMAC BASIN COMPACT AS AMENDED BY PUBLIC LAW 92-407, 91st CONGRESS, IN SEPTEMBER 1970. IT STATES "THE MONEYS NECESSARY TO FINANCE THE COMMISSION IN THE ADMINISTRATION OF ITS BUSINESS IN THE CONSERVANCY DISTRICT SHALL BE PROVIDED THROUGH APPROPRIATIONS FROM THE SIGNATORY BODIES [THAT IS, THE DISTRICT OF COLUMBIA, MARYLAND, PENNSYLVANIA, VIRGINIA AND WEST VIRGINIA] AND THE UNITED STATES..." CONGRESS HAS REAFFIRMED ITS ORIGINAL MANDATE BY APPROPRIATING FUNDS TO THE COMMISSION FOR A FEDERAL SHARE EVERY YEAR BEGINNING WITH FISCAL YEAR 1949.

YOU HAVE OUR BUDGET JUSTIFICATION SO I WILL ONLY BRIEFLY HIGHLIGHT MAJOR WORK PROGRAM ITEMS IN THIS SUMMARY STATEMENT.

COOPERATIVE WATER SUPPLY OPERATIONS

THE ICPRB SECTION FOR COOPERATIVE WATER SUPPLY OPERATIONS (CO-OP) DEVELOPED AND IS IMPLEMENTING THE TECHNICAL FRAMEWORK FOR THE LOW-COST, LARGELY NON-STRUCTURAL, SOLUTION WHICH IS ASSURING ADEQUATE WATER FOR THE NATIONAL CAPITAL AREA INTO THE NEXT CENTURY. THE EIGHT AGREEMENTS SIGNED IN 1982 BY ICPRB, THE FEDERAL GOVERNMENT, THE DISTRICT OF COLUMBIA, MARYLAND, VIRGINIA AND TWO REGIONAL WATER UTILITIES INSTITUTIONALIZED THE FRAMEWORK AND THE ARMY CORPS OF ENGINEERS ACCEPTED IT AS BY FAR THE BEST SOLUTION IN ITS 1983 REPORT TO CONGRESS. THE SAVINGS OF $200 MILLION IN CAPITAL COSTS AS COMPARED WITH THE LEAST COSTLY OF

PREVIOUSLY RECOMMENDED SOLUTIONS ARE IN STARK CONTRAST TO OUR FEDERAL APPROPRIATION REQUEST OF $79,000.

CO-OP'S DROUGHT MANAGEMENT SYSTEM DEPENDS ON (1) EARLY DETECTION OF DROUGHTS, BASED ON LONG-RANGE STREAMFLOW FORECASTS, (2) ACCURATE SHORT-TERM WATER USE AND SUPPLY FORECASTS DURING DROUGHT PERIODS, AND (3) OPTIMAL ALLOCATION OF SUPPLIES ON A REGIONAL BASIS DURING DROUGHT PERIODS.

ALTHOUGH POTOMAC RIVER SUMMER FLOWS WERE BELOW NORMAL LAST YEAR, THEY WERE ADEQUATE TO SUPPLY ALL WITHDRAWAL NEEDS AS FORECAST BY CO-OP IN THE SPRING. NEVERTHELESS, THE UTILITIES HELD RESERVE WATER IN LOCAL RESERVOIRS UNTIL CO-OP SHORT-TERM WATER USE AND SUPPLY FORECASTS DURING THE LOWEST FLOW MONTH OF SEPTEMBER CONCLUDED NEITHER THE LOCAL RESERVES NOR WATER SUPPLY RELEASES FROM THE UPSTREAM RANDOLPH LAKE (FORMERLY KNOWN AS BLOOMINGTON) WOULD BE NEEDED. AT THE SAME TIME, CO-OP, THE WATER UTILITIES AND THE CORPS OF ENGINEERS HELD THEIR ANNUAL DROUGHT EXERCISE IN WHICH CO-OP SIMULATES ON ITS COMPUTER SEVERE DROUGHT CONDITIONS AND THE NECESSARY COORDINATED OPERATIONS OF ALL UPSTREAM AND LOCAL RESERVOIRS AND INTAKES TO COUNTER THE SIMULATED EXTREME LOW POTOMAC FLOWS. THUS ALL CONCERNED REHEARSE ANNUALLY THE NECESSARY OPERATING PROCEDURES, INCORPORATE IMPROVEMENTS IN COMPUTER PROGRAMS AND OTHER ASPECTS OF THE COORDINATED OPERATIONS, AND ARE PREPARED FOR ANY EXTREME DROUGHT CONDITIONS WELL INTO THE NEXT CENTURY.

## ALGAE BLOOMS

ICPRB CONTINUES TO RESPOND TO THE CHALLENGE OF A LEADERSHIP ROLE IN CONTINUING THE IMPROVEMENT OF WATER QUALITY IN THE

POTOMAC ESTUARY, THE LARGEST ARM OF CHESAPEAKE BAY. IT IS EVEN MORE IMPORTANT BECAUSE OF THE EXTRAORDINARY BLUE-GREEN ALGAE BLOOM IN THE UPPER POTOMAC TIDEWATER DURING THE SUMMER OF 1983 AND LESSER BLOOMS IN SUBSEQUENT YEARS.

IN EARLY 1985 A PANEL OF ALGAE AND ESTUARINE EXPERTS COMPLETED ITS ASSESSMENT OF THE ALGAE PROBLEM AND CONCLUDED THAT THE RELEASE OF PHOSPHORUS FROM THE SEDIMENTS WAS A MAJOR CONTRIBUTOR TO THE 1983 BLOOM ALONG WITH THE UNUSUAL WEATHER AND FLOW CONDITIONS. ICPRB AND OTHERS ON THE POTOMAC STRATEGY COMMITTEE (USEPA, DC, MD, VA, AND THE METRO WASHINGTON COUNCIL OF GOVERNMENTS) ARE FOLLOWING UP THE EXPERT PANEL RECOMMENDATIONS TO DETERMINE ALTERNATIVES FOR CONTROLLING SUCH DAMAGING BLOOMS IN THE FUTURE. ICPRB'S ROLE INCLUDES SUCH WORK AS DETERMINING THE PROBABLE FREQUENCY OF CRITICAL WEATHER AND FLOW CONDITIONS FOR ALGAE BLOOMS; DEVELOPING INFORMATION ON CHARACTERISTICS OF SPECIFIC ALGAE SPECIES OF CONCERN; CALIBRATION AND VERIFICATION OF A PREDICTIVE SEDIMENT AND NUTRIENT RUNOFF MODEL IN THE MONOCACY SUB-BASIN, A MAJOR CONTRIBUTOR OF SEDIMENT AND NUTRIENTS TO THE RIVER; AND EVALUATION OF BENEFITS OF ACHIEVING ALTERNATIVE GOALS FOR REDUCING THE FREQUENCY AND INTENSITY OF THE ALGAE BLOOMS.

## SEDIMENT AND NUTRIENTS

ICPRB IS CONTINUING TO FOCUS OTHER STUDY EFFORTS ON THE TRANSPORT OF SEDIMENT AND ASSOCIATED NUTRIENTS TO THE ESTUARY FROM NONPOINT SOURCES SUCH AS AGRICULTURE IN THE UPPER BASIN. ESPECIALLY PHOSPHORUS, WHICH FREQUENTLY CAN LIMIT ALGAE GROWTH IN FRESH WATER SYSTEMS SUCH AS THE POTOMAC TIDAL RIVER, ADHERES

TO SEDIMENT PARTICLES ERODED FROM THE UPPER BASIN. SEDIMENT IS TRANSPORTED SLOWLY DOWNSTREAM FROM ONE FLOOD PLAIN LOCATION (AND OTHER STORAGE SITES) TO ANOTHER. FOR EXAMPLE, DURING THE FLOOD IN NOVEMBER OF LAST YEAR, TOP SOIL WAS COMPLETELY WASHED AWAY FROM SOME CULTIVATED LANDS IN THE POTOMAC SOUTH BRANCH SUB-BASIN AND REDEPOSITED IN OTHER LOCATIONS TO LEVELS NEAR THE TOPS OF CORN STALKS. COMMISSION STAFF WILL BE DEVELOPING A CONCEPTUAL SEDIMENT TRANSPORT MODEL WHICH WILL ALLOW THE ROUTING AND STORAGE OF SEDIMENT TO BE QUANTIFIED FOR CRITICAL RIVER SEGMENTS AND SUB-BASINS. CONCEPTUAL TRANSPORT MODELS ON SUCH A LARGE WATERSHED AS THE POTOMAC BASIN MAY BE THE ONLY WAY TO PROVIDE A VALID REPRESENTATION OF SEDIMENT AND ASSOCIATED NUTRIENT DELIVERY TO THE TIDAL RIVER AND ESTUARY. THUS THE COST-EFFECTIVENESS OF CHANGES IN UPPER BASIN LAND MANAGEMENT PRACTICES CAN BE EVALUATED IN TERMS OF THEIR IMPACT ON THE TIDAL POTOMAC AND BAY.

## EDUCATION AND INFORMATION

EDUCATION AND INFORMATION ALSO ARE IMPORTANT ACTIVITIES OF COMMISSION. THE MONTHLY "POTOMAC BASIN REPORTER" IS THE MOST WIDELY READ NEWSLETTER ABOUT WATER QUALITY AND OTHER WATER RESOURCES IN THE BASIN AND IS A SOURCE OF INFORMATION FOR NOT ONLY THE PUBLIC BUT ALSO FEDERAL, STATE AND LOCAL AGENCY PERSONNEL. THE COMMISSION ALSO PUBLISHES PERIODIC REPORTS ON WATER QUALITY CONDITIONS IN THE BASIN AND OTHER SUBJECTS OF SPECIAL CONCERN. FOR EXAMPLE, WITHIN A MONTH OR SO WE WILL BE DISTRIBUTING A NEW SPECIAL PUBLICATION ON "THE POTOMAC ESTUARY AND THE BAY". IT WILL CLARIFY MANY QUESTIONS IN THE PUBLIC MIND

ABOUT THE RELATIONSHIP OF THE POTOMAC TO THE BAY, AS WELL AS SUBJECTS SUCH AS NUTRIENTS, SEDIMENT, ALGAE, TOXICS AND AQUATIC PLANTS. IT ALSO WILL PROVIDE UP-TO-DATE INFORMATION ON WHERE WE ARE AND WHERE WE'RE HEADED WITH PROGRAMS TO FURTHER IMPROVE THE TIDEWATER POTOMAC.

## CONCLUSION

AS WE HAVE TESTIFIED IN PREVIOUS YEARS, ICPRB PLAYS A UNIQUE INTERGOVERNMENTAL ROLE IN THE POTOMAC BASIN. IT HAS PUT FEDERALISM INTO SUCCESSFUL PRACTICE FOR 45 YEARS. WITHOUT FEDERAL PARTICIPATION, THERE WILL BE AN EMPTY PLACE AT THE TABLE. FEDERAL PARTICIPATION ENHANCES EFFICIENCY AND EFFECTIVENESS OF THE ESSENTIAL LOCAL-STATE-FEDERAL RELATIONSHIPS SO VITAL TO THE NATIONAL CAPITAL AND OTHER NATIONAL INTERESTS IN THE BASIN. I FEEL STRONGLY THAT THE BENEFITS TO THE FEDERAL GOVERNMENT FAR EXCEED THE COST OF THE $79,000 APPROPRIATION WHICH WE ARE REQUESTING.

THANK YOU AGAIN FOR THE OPPORTUNITY TO TESTIFY, AND NOW MR. EASTMAN AND I WILL BE HAPPY TO ANSWER YOUR QUESTIONS.

Mr. **Bevill**. The Chair recognizes Mr. Myers.

Mr. **Myers**. What are the States doing about Gramm-Rudman? Are they cutting back similarly with Gramm-Rudman, or are they going to continue their contributions.

Mr. **Depuy**. It would be very difficult, Congressman, to know that at this point. We hope that they are going to continue their contribution. And I think they are.

Mr. **Bevill**. Are the States continuing to pay their share? Each of them?

Mr. **Depuy**. Yes, sir.

Mr. **Kanuck**. Yes, sir.

Mr. **Bevill**. I believe Mr. Bielo has a statement.

### COST SHARING

Mr. **Bielo**. The point I want to emphasize here before this committee, based on all of the discussion this morning on cost-sharing—we, too, are faced with the difficulties of cost-sharing, and the negotiations. And while they have proceeded to a point where we are down to two issues, those two issues are the sticky ones, and they really get down to the actual dollars invested.

### COWANESQUE PROJECT

What we are finding is a real problem in cost-sharing negotiations with the Corps of Engineers on the Cowanesque Project, which your committee has seen fit to put into the 1985 supplemental budget for construction in 1986. We have agreed to up-front financing, which is about $13 million. We have agreed to forego the interest-free 10 year period in this project, even though we don't need some of the water right away.

We have agreed to the O&M, and to the 100 percent payback on water supply. We have agreed to pay back the 28 percent, which is the joint-use cost in the original project. After we have made what we feel are the concessions of this situation, the difficulty arises in the difference in interpreting the 1958 Water Supply Act. We do not find any place in that Act where you talk about escalating the cost of the project for the joint-use costs from the time of construction to the time the contract was signed. We don't find that in there. That adds measurably to the cost to the Commission.

The second area is the interest rate that would be applicable. And, again, we find from our counsel's review of the law—the 1958 Water Supply Act—that the interest rate should be the interest that was applicable at the time construction of the project was initiated. In other words, you would be paying back the cost the Federal government had in the project.

In our case this amounts to the $13 million up front, and about $81 million pay-back over time. The Corps finding results in something very different. We would have the same up-front payment for construction; however, their payment in return would be some $225 million. In other words, you are talking an extra $150-some million payback by this difference in interpretation. And then we heard this morning of water at $150 per acre-foot—we're talking here of paying $3,400 per acre-foot on our proposal. If we take the Corps figure, we would be paying $9,600 per acre-foot. We think that there really needs to be language somewhere that takes care of these interpretations, which if they go on put an undue burden on most any of us.

Thank you.

Mr. BEVILL. I understand and I'm aware that these negotiations are going on with Mr. Robert Dawson, the Assistant Secretary, and so we will certainly consider your testimony.

I have several questions for each of the Commissions which I will submit for the record. We will also place the justifications for the Commissions in the record at this point.

[The information follows:]

[The committee stands adjourned until 10:00 tomorrow.]

DELAWARE RIVER BASIN COMMISSION

Mr. Bevill. In regard to the Federal contribution, explain how you are able to reduce your FY 1987 budget request by $75,000 from the FY 1986 appropriation level.

Mr. Kanuck. As explained in my statement, the reduction stems from an effort to have Federal dollars for the basic contribution and water quality program counted on an equal basis with dollars provided by the States for these purposes. Since State contributions already include their portion of funding for the Commission's water quality program, the Federal contribution should similarly reflect Federal water quality dollars. The State members would have the Federal Government provide not only a basic contribution that is equal to their combined basic contribution and water quality funding, but also to provide an additional water quality grant. Simply, this inequitable counting of Federal dollars needs to be brought to an end.

Mr. Bevill. On page 6 you say in reference to additional Federal funds available to the Commission, "it is assumed most of these programs will carry over in FY 1987 . . ." What happens if these additional Federal programs are not funded at all, or at a reduced rate?

Mr. Kanuck. A basic Federal water quality grant has been provided to the Commission each year since 1963, and we feel there is every likelihood this record will continue into FY 1987. The combined Federal contribution and Federal water quality grant, even with significant reductions stemming from Gramm-Rundman and without any additional Federal grants, would still exceed the $289,000 the State members feel constitutes a Federal fair share. Truly, the Federal Government is carrying its fair share with due regard to Compact mandates.

Should an unforeseen or critical program need arise, the Commission does have funds upon which it could draw. At the close of Fiscal Year 1985, the Commission had available $745,000 in reserves for undesignated General Fund programs and Special Projects. It also had additional General Fund reserves designated for specific future purposes totalling $644,000—making a total of $1,389,000 in reserves. The size of these reserves and the interest which will be earned thereon, lends the Commission considerable latitude for programming and reprogramming to insure that program requirements are met.

Mr. Bevill. Explain the land management plan associated with the Upper Delaware Scenic and Recreation River and your consideration of including it in DRBC's Comprehensive Plan.

Mr. Hansler. The National Park Service proposed management plan seeks to protect the natural qualities which justified inclusion of the Upper Delaware River corridor in the National Wild and Scenic Rivers System, on lands which will remain predominately in private ownership. Local control of land use decisions, accomplished in cooperation with Federal and State authorities to achieve objectives of Congress, is the basic approach of the proposed plan. Land and water use guidelines, mandated by the legislation and included as part of this draft plan, identify appropriate objectives and means to protect the region's resources. They will be used as a tool by the proposed Upper Delaware

Management Council to evaluate results of local control efforts, but specific conformance with them will not be required. (The Upper Delaware Management Council is the cooperative intergovernmental institutional arrangement suggested by the draft management plan to oversee implementation of the management plan.) If the results of local efforts are deemed detrimental to the designated river area, the following procedures to be followed by the Management Council are established as part of the NPS proposed Land Management Program:

> The Management Council is to make every effort to resolve the problem locally and cooperatively within existing authorities.
>
> Notify the Secretary of Interior and provide recommendations.
>
> Seek to utilize existing authorities at State and DRBC levels.
>
> Consider leases, exchanges, purchase and sellback, conservation easements.
>
> Seek voluntary private actions, negotiation and mediation, mitigation and establishment of land trusts.
>
> Acquire fee titles by the Secretary of the Interior within limits established by the legislation only as a last resort. Such acquisitions to be resold subject to deed restrictions for compatible use.

There would be no assumption of any new responsibilities by the Commission under the land management plan. For this reason, the basic approach could probably be supported by the Commission by including it in the Commission's Comprehensive Plan.

Mr. Bevill. Describe the Commission's plan for developing hydropower at Blue Marsh Reservoir in Pennsylvania. What role would the Corps of Engineers play in this proposed development?

Mr. Hansler. The Delaware River Basin Commission and the Pennsylvania Department of Environmental Resources applied for a minor license to the Federal Energy Regulatory Commission in June 1982. License 3026 was issued jointly to the DRBC and PADER on April 19, 1984 to construct, operate and maintain a 1.3 mw hydroelectric project at the existing Blue Marsh Dam.

The Commission also applied to EPRI for a demonstration grant in December 1983 to build a modular type hydroelectric plant with pumps as turbines at Blue Marsh Dam. EPRI selected the Commission's proposal as the one to use for their national demonstration project, and the grant ($500,000) would be funded by the Department of Energy. It is the Commission's intention to sell power produced at the Blue Marsh damsite to the Pennsylvania Power and Light Company in Allentown, Pennsylvania, whose transmission lines are about one mile from the Blue Marsh damsite.

The proposed project would be operated as a run-of-river facility with water released from the dam for low flow augmentation and water supply. The Blue Marsh Dam and Reservoir are located on Tulpehocken Creek in Berks County, Pennsylvania about six miles northwest of th confluence of the creek with the Schuylkill River at Reading, Pennsylvania.

The Corps of Engineers has been closely associated with the hydro project during the design stage and, in fact, the design was modified as a result of the Corps' review. A Memorandum of Agreement with the Corps of Engineers has been prepared to define the responsibilities of all agencies in constructing and operating the hydro project.

When DRBC first embarked on this project, the price of oil was about $39 per barrel. Recently that price has plummeted to about $12 per barrel. There is now a serious question about the economic feasibility of the project in light of these changed conditions.

SUSQUEHANNA RIVER BASIN COMMISSION

## Flood Warning System

MR. BEVILL. Describe the expanded flood warning system you are initiating in conjunction with the National Weather Service.

MR. BIELO. The expanded flood warning system includes installation of additional stream gages and rain gages, installation of automatic data transmission equipment, installation of computer equipment to receive and analyze data, additional staff for the Middle Atlantic River Forecast Center, installation of a radar unit to eliminate a gap in present areal coverage, and establishment and staffing of an Hydrologic Services Area operation at Harrisburg, Pennsylvania. The establishment of the Hydrologic Services Area will permit separation of forecast preparation from forecast dissemination, thus eliminating delays resulting from having both operations conducted by the same people.

## Drought

MR. BEVILL. What are some examples of long-range programs the Commission is initiating dealing with drought and recurring water supply problems as mentioned in Mr. Bielo's statement?

MR. BIELO. The following are examples of long-range programs dealing with drought recurring water supply problems:

a) A water supply framework planning effort has been started. Its purpose is to establish target flows for drought emergency planning in the Susquehanna Basin, including inflows to the Chesapeake Bay.

b) Investigation of whether existing storage facilities and releases can be managed to provide additional water during low flow periods. The potential for using existing storage to increase inflow to the Chesapeake Bay during low flow periods will be included.

c) A study is proposed to address existing and potential future water supply problems in a part of the Basin which is urbanizing rapidly. Conflicts between land use, water quality and water quantity are expected to occur in the study area, as are conflicts between withdrawals and instream uses.

d) A study of groundwater availability is being conducted in the New York part of the Basin which will provide groundwater data for use in subsequent development of management plans.

## Cowanesque Lake Project

MR. BEVILL. What are the additional studies requested by the State of New York in connection with the Cowanesque Lake, Pennsylvania, project?

MR. BIELO. In connection with the Cowanesque Lake Project, New York State requested studies of the effects of the proposed project on the aquatic life of the downstream river system, and the impact on groundwater levels.

MR. BEVILL. Describe your plans to include water supply storage at the Cowanesque project. What are the terms of the proposed repayment contract?

MR. BIELO. The Commission proposed to develop water supply storage at the Cowanesque Lake Project through reallocation of existing storage potential and to include expanded recreation. The Commission proposed repayment of 100% of the joint use costs allocated to water supply; to pay the interest accrued on these costs as required by the Water Supply Act of 1958 and as outlined in S. 1567; to pay the appropriate share of O&M and major rehabilitation costs; and to pay up-front the cost of modifying the project, including expanded recreation and the engineering and design costs incurred by the Corps of Engineers in developing the modification plans. The Commission believes its proposal conforms to the Water Supply Act of 1958 and to S. 1567 in terms of repayment of joint use costs and interest.

## Interstate Commission on the Potomac River Basin

Mr. Bevill. Are all the signatory States contributing their fair share to the operation of the Commission?

Mr. Eastman. As indicated previously, all of the signatory States, including the District of Columbia, contributed their full formula shares to the Commission's operating budget for the current fiscal year, as did the Congress. They also have included their full formula shares in their appropriation requests for fiscal year 1987 to their legislatures which are still in session.

Mr. Bevill. Bring us up to date regarding your efforts on behalf of the National Park Service with reference to the control of hydrilla.

Mr. Eastman. Last spring when the Corps of Engineers was well along in the development of a local-state-federal cost-shared hydrilla management program, we decided our Hydrilla Regional Action Committee was no longer needed and we terminated it. The Corps, after completing additional field research and starting negotiations with local and state governments about cost-sharing, found that the use of herbicides in tidal waters would not be permitted by the States and concluded that harvesting the plants in areas of greatest damage, for example around marinas, is the preferred management program. The cost-sharing agreements are being arranged by the Corps through the Metropolitan Washington Council of Governments.

Mr. Bevill. In reference to water supply as shown on page 2, what are the refinements the Commission is making in the operation of the computerized programs regarding reservoir withdrawals, etc.?

Mr. Eastman. The improvements in the cooperative water supply operations include for example the incorporation of near real-time streamflow and precipitation data retrieval from NOAA's satellite service into the CO-OP computer system and modification of the streamflow and water use models in the computer to enhance forecasting precision. As in previous years all improvements will be tested in the annual drought management exercise during the late summer with the water utilities and the Corps of Engineers.

Mr. Bevill. On page 3 you mention the "toxic spill model for the Potomac". Where is the model located and how long has it been in existence?

Mr. Eastman. The Potomac toxic spill model is a mathematical model programmed on our computer for predicting the time-of-travel and dispersion of a pollutant as it might be carried by the river's flow from an upstream spill location to a downstream location such as a water supply intake. An early version has been operable for the freeflowing mainstem Potomac and some small tributaries for about three years. It has been improved and is being extended to include the Shenandoah River and Potomac South Branch, the largest of the tributaries, based on data collected by the U.S. Geological Survey under a cooperative arrangement with the Commission.

Mr. Bevill. Why is it necessary to increase your request for Publications by $6,000?

Mr. Eastman. The increase of six thousand dollars includes a small amount for the increased costs for printing and basin-wide distribution of the monthly Potomac Basin Reporter, the total cost of which is more than two-thirds of the annual Publications budget. A larger amount is for a Potomac Basin long-term water quality trend report which covers a period of about twelve years and is much larger and more costly than our usual publications. We publish such a long-term trend report about every ten to twelve years, for example, the previous one was published eleven years ago in 1975.

# SUSQUEHANNA RIVER BASIN COMMISSION
# SALARIES AND EXPENSES
# FY 1987 BUDGET

## JUSTIFICATION OF PROGRAM AND PERFORMANCE

Activity: Federal Representation

The Susquehanna River Basin Commission was created by Compact (Public Law 91-575) among the States of Maryland and New York, the Commonwealth of Pennsylvania, and the Federal Government. The purpose of the Compact is to enable the signatory parties to participate jointly in the conservation, utilization, development, and control of water and related resources in the region of the Susquehanna River Basin.

Under the terms of the Compact, the Commission is directed to develop and implement comprehensive plans, policies, and programs relating to the water resources of the Basin; to adopt and promote uniform and coordinated policies for water conservation, control, and development in the Basin; and to encourage the planning, development, and financing of water resources projects according to such plans and policies.

The Commission's membership consists of the Governors of the signatory states, or their appointed designees, and a Federal Member appointed by the President to represent all Federal Agencies and who historically has been the Secretary of the Interior. In addition, each Governor and the President are directed to appoint a Commissioner to serve as alternate to the Member, with identical powers of the Member, including the power to vote in the absence of the Member.

The duties of the Federal Member and the United States Commissioner are to represent the interests of the Federal Government on the Commission and to protect the national interests in the water resource development programs for the Susquehanna River Basin. To accomplish this, the Member and the Commissioner must work closely with all interested Federal departments and agencies, serving as coordinators to assure that Federal interests are fully informed regarding all water resources development programs for the Susquehanna River Basin. They also represent such Federal interests in all actions by the Commission relating to the comprehensive plan and the advisability of individual water resource policies, programs, and projects which the Commission may propose or consider.

An appropriation of $179,000 for fiscal year 1987 is requested to finance salaries and expenses necessary to enable the United States Commissioner to carry out his responsibilities to protect the Federal Government's interests in the Susquehanna River Basin.

### Gramm-Rudman-Hollings Impact

As a result of the $7 thousand P. L. 99-177 reduction no temporary help will be used and printing and supply costs will be reduced.

## SUSQUEHANNA RIVER BASIN COMMISSION
## DISTRIBUTION OF BUDGET AUTHORITY BY ACCOUNT

| | 1985 Actual | 1986 Enacted To date | 1986 Adjusted Approp. | 1987 Estimate |
|---|---|---|---|---|
| Appropriation: Salaries and Expenses | | | | |
| Enacted to date ........................ | $169,000 | $163,000 | $156,000 | $179,000 |

### SUMMARY OF INCREASES/DECREASES, 1987

| Federal Representation: | Base for 1987 | Changes | 1987 Estimate |
|---|---|---|---|
| Budget Estimate, 1987 | $163,000 | $+16,000 | $179,000 |

### ANALYSIS BY ACTIVITIES

(Direct Appropriations)

| Activity | FY 1985 Amount Available | FY 1986 Enacted To date | FY 1986 Adjusted Approp. | FY 1987 Estimate | Increase (+) or Decrease (-) 1986 Compared with 1987 |
|---|---|---|---|---|---|
| Federal representation | $169,000 | $163,000 | $156,000 | $179,000 | $+16,000 |
| Unobligated balance lapsing | 19,000 | -- | -- | -- | -- |
| Total | $150,000 | $163,000 | $156,000 | $179,000 | $+16,000 |

### JUSTIFICATION

Federal representation; Fiscal Year 1986, $163,000; Fiscal Year 1987, $179,000; increase $16,000.

| Increase (+) or Decrease (-) Amount | Increase (+) or Decrease (-) Positions | Total Program | Total Positions | Explanation |
|---|---|---|---|---|
| $+16,000 | -- | $179,000 | 2 | To continue to provide for the cost of operation of the Commissioner's office. |

## SUSQUEHANNA RIVER BASIN COMMISSION
## SALARIES AND EXPENSES

For expenses necessary to carry out the functions of the United States member of the Susquehanna River Basin Commission, as authorized by law (84 Stat. 1541), [$163,000] $179,000. (P. L. 99-141, making appropriations for energy and water development, 1986.)

Program and Financing (in thousands of dollars)

| Identification code 46-0500-0-1-301 | 1985 Actual | 1986 Estimate | 1987 Estimate |
|---|---|---|---|
| Program by activites: | | | |
| 10.00 Total obligations............. | 150 | 163 | 179 |
| Financing: | | | |
| 25.00 Unobligated balance lapsing... | 19 | | |
| 39.00 Budget authority......... | 169 | 163 | 179 |
| 40.00 Appropriation................. | 169 | 163 | 179 |
| Relation of obligations to outlays: | | | |
| 71.00 Obligations incurred, net..... | 150 | 163 | 179 |
| 72.40 Obligated balance, start of year....................... | 13 | 8 | 8 |
| 74.40 Obligated balance, end of year | -8 | -8 | -8 |
| 77.00 Adjustments in expired accounts.................... | -1 | | |
| 90.00 Outlays, excluding pay raise supplemental................ | 154 | 163 | 179 |

Object Classification (in thousands of dollars)

| | | | |
|---|---|---|---|
| Personnel compensation: | | | |
| 11.1 Full-time permanent........... | 113 | 106 | 114 |
| 11.3 Other than full-time permanent | | 3 | 3 |
| 11.9 Total personnel compensation | 113 | 109 | 117 |
| 12.1 Personnel benefits: Civilian.. | 10 | 18 | 18 |
| 21.0 Travel and transportation of persons...................... | 4 | 5 | 5 |
| 23.1 Standard level user charges... | 11 | 11 | 11 |
| 23.3 Communications, utilities, and miscellaneous charges... | 1 | 4 | 5 |
| 24.0 Printing and reproduction..... | 1 | 3 | 4 |
| 25.0 Other services................ | 9 | 10 | 15 |
| 26.0 Supplies and materials........ | 1 | 3 | 4 |
| 99.9 Total obligations........... | 150 | 163 | 179 |

## SUSQUEHANNA RIVER BASIN COMMISSION
## SALARIES AND EXPENSES

Personnel Summary

| Identification code 46-0500-0-1-301 | 1985 Actual | 1986 Estimate | 1987 Estimate |
|---|---|---|---|
| Total number of full-time permanent positions .............. | 2 | 2 | 2 |
| Total compensable workyears: | | | |
| Full-time equivalent employment... | 2 | 2 | 2 |
| Average ES salary ................. | $68,700 | $68,700 | $68,700 |
| Average GS grade ................. | 13.00 | 13.00 | 13.00 |
| Average GS salary ................. | $45,117 | $45,117 | $45,117 |

## SUSQUEHANNA RIVER BASIN COMMISSION
## SALARIES AND EXPENSES
## DETAIL OF PERMANENT POSITIONS

| | 1985 actual | 1986 estimate | 1987 estimate |
|---|---|---|---|
| Special positions at rates equal to or in excess of $68,700: | | | |
| U. S. Commissioner ............ | 1 | 1 | 1 |
| GS/GM-13 ........................ | 1 | 1 | 1 |
| Total permanent positions ..... | 2 | 2 | 2 |
| Unfilled positions, end of year | -- | -- | -- |
| Total permanent employment, end of year ..................... | 2 | 2 | 2 |

# CONTRIBUTION TO SUSQUEHANNA RIVER BASIN COMMISSION
## FY 1987 BUDGET

## JUSTIFICATION OF PROGRAM AND PERFORMANCE

The Susquehanna River Basin Commission was created by Compact (Public Law 91-575) among the States of Maryland and New York, the Commonwealth of Pennsylvania, and the Federal Government. The purpose of the Compact is to enable the signatory parties to participate jointly in the conservation, utilization, development, and control of water and related resources in the region of the Susquehanna River Basin.

Under the terms of the Compact, the Commission is directed to develop and implement comprehensive plans, policies, and programs relating to the water resources of the Basin; to adopt and promote uniform and coordinated policies for water conservation, control, and development in the Basin; and to encourage the planning, development, and financing of water resources projects according to such plans and policies.

The principal Members of the Commission are the Governors of the signatory States, or their appointed designees, and a Federal Member appointed by the President. The Compact also provides for the appointment of a Commissioner (alternate member) by each Governor and the President with identical powers of the Member and power to vote in the absence of the Member.

The fiscal year 1987 estimate requests $240,000 to cover the Federal Government's share of the $1,522,500 current expense budget of the Susquehanna River Basin Commission. The request is a $10,000 increase over the fiscal year 1986 appropriation. Authority for the Federal Government's participation in the current expense budget of the Commission is provided for under Section 14.3 of the Susquehanna River Basin Compact (Public Law 91-575, approved December 14, 1970). The fiscal year 1987 current expense budget for the Commission totals $1,522,500 and represents an increase of $39,500 over its fiscal year 1986 budget. This increase is for incremental costs in salaries and non-discretionary costs of social security, pensions, insurance, and health benefits.

In fiscal year 1987, 27 positions will be funded, the same level of staff as in fiscal year 1986.

### Gramm-Rudman-Hollings Impact

As a result of the $10 thousand P. L. 99-177 reduction the contribution to the Commission will be reduced.

The Susquehanna River Basin Commission's fiscal year 1987 operating budget of $1,522,500 will support the following programs:

## Introduction

The Susquehanna River Basin Commission's fiscal year 1987 programs address, at the Basin level, current water resources issues of national and regional concern. Examples being in the area of flood damage reduction, surface and groundwater management and protection and nonpoint source pollution.

## Flood Plain Management and Protection

This program has received continuing attention by the Commission due to the high flood risk in the Basin and the extremely large number of Basin communities located in high flood hazard areas.

## Proposed Flood Forecasting System Improvement Program

Program emphasis is directed to providing technical assistance and development of self-help flood damage reduction products readily usable by local government and industry, such as flood stage maps, flood damage reduction manuals and self-help warning and damage reduction training seminars.

## Water Resources Management

The Commission's efforts in water management will be shifted from collection of basic information regarding availability of supplies, existing supply systems, water needs and the development of necessary water technical and engineering tools to the preparation of a carefully planned regional water management program. The program will serve as a guide for future municipal, industrial and agricultural water supply development in the Basin.

Areas of special concern include management and protection of groundwater supplies and low flow and drought emergency management.

## Water Resources Quality Management and Protection

Water quality activities will continue at a high level of priority in fiscal year 1987 with program emphasis on increased monitoring on nonpoint source contributions. Special effort will be directed to identifying major nutrient loading sources throughout the Basin in cooperation with Maryland and Pennsylvania and the Environmental Protection Agency's Chesapeake Bay Program.

## Watershed Management and Protection

The program activities under this topic will be coordinated with the non-point source monitoring program to identify specific areas and land uses requiring priority action under state and federal programs.

## Recreation, Fish and Wildlife

The program objective is to preserve and/or enhance existing water-related outdoor recreation and where possible to expand these opportunities. A prime example is the Commission's effort to achieve restoration of diadromous fishes to the Susquehanna River. Another area of major concern involves development of a data base and methodology for assessing instream flow needs.

## Coordination

The Commission serves to coordinate various federal, state and local programs affecting water resources in the Basin. The Comprehensive Plan serves as a basis for developing common approaches to resolution of problems and conflicts. The programs involved are flood control, water supply, water quality, recreation and fish and wildlife, and watershed management activities.

## Project Review

The Commission is charged with the responsibility of conducting review of certain projects to assure they are compatible with the Comprehensive Plan. These reviews may require in some cases extensive technical and administrative analysis, as well as public hearings. Examples are relicensing of hydroelectric facilities, licensing of new electric generating facilities, industrial and municipal withdrawals from surface and/or ground waters, significant discharges to waters of the Basin, and flood control projects.

## SUSQUEHANNA RIVER BASIN COMMISSION
## FY 1987 OPERATING BUDGET

| | FY-1985 Budget | FY-1986 Budget | FY-1987 Budget |
|---|---|---|---|
| **Revenues:** | | | |
| Signatory Parties: | | | |
| Maryland | $ 230,000 | $ 235,000 | $ 240,000 |
| New York | 230,000 | 235,000 | 240,000 |
| Pennsylvania | 230,000 | 235,000 | 240,000 |
| Federal Government | 230,000 | 230,000 1/ | 240,000 |
| Other Revenues: | | | |
| Cowanesque Water Supply Project | 231,000 | 109,500 | -0- |
| Grant, EPA-Water Quality (106) | 60,000 | 60,000 | 80,000 |
| Sale of Publications & Misc. Inc. | 50,000 | 50,000 | 50,000 |
| Building Rental Income | 40,000 | 40,000 | 40,000 |
| Fiscal Stabilization Fund | 164,300 | 288,500 | 392,500 |
| TOTAL ALL SOURCES | $1,465,300 | $1,483,000 | $1,522,500 |
| **Expenditures:** | | | |
| Personal Services | $ 850,000 | $ 855,000 | $ 896,000 |
| Fringe Benefits | 265,000 | 267,000 | 302,500 |
| Special & Contractual Services | 95,400 | 94,600 | 50,600 |
| Travel & Subsistence, Meetings | 37,000 | 37,000 | 37,500 |
| Communications, Postage | 15,000 | 15,000 | 15,500 |
| Rent-Machinery & Equipment | 10,600 | 10,600 | 2,600 |
| Printing, Reproduction, Legal Ads | 23,000 | 23,000 | 30,000 |
| Repairs & Maint.-Bldg. & Equip. | 14,500 | 14,500 | 24,000 |
| Other Contractual Services | 11,000 | 11,000 | 12,500 |
| Taxes, Utilities, Janitorial Services | 56,000 | 56,500 | 58,500 |
| Mortgage Payments | 25,000 | 25,000 | 25,000 |
| Supplies & Materials | 37,800 | 41,800 | 41,800 |
| Misc. Expenses | 8,500 | 8,500 | 8,500 |
| Automotive & Office Equipment | 16,500 | 23,500 | 17,500 |
| TOTAL EXPENDITURES | $1,465,300 | $1,483,000 | $1,522,500 |

1/ 1986 Adjusted Appropriation is $220,000.

## SUSQUEHANNA RIVER BASIN COMMISSION
## CONTRIBUTION TO SUSQUEHANNA RIVER BASIN COMMISSION

### COMPARISON OF FUNDING

| | Budget Authority | | | |
|---|---|---|---|---|
| Appropriation/Activity | 1985 Actual | 1986 Enacted To date | 1986 Adjusted Approp. | 1987 Estimate |
| Contribution to Susquehanna River Basin Commission .................... | $230,000 | $230,000 | $220,000 | $240,000 |

### SUMMARY OF INCREASES/DECREASES FOR 1987 BY ACTIVITY

| | 1987 Base | 1987 Estimate | Increase (+) or Decrease (-) |
|---|---|---|---|
| Activity: Contribution to the Commission........ | $230,000 | $240,000 | $+10,000 |

To provide for the 1987 Federal share of the annual expenses of the Susquehanna River Basin Commission.

### JUSTIFICATION

Contribution to the Commission: Fiscal year 1986,$230,000; fiscal year 1987, $240,000; increase of $10,000.

| Increase (+) or Decrease (-) | | | | |
|---|---|---|---|---|
| Amount | Positions | Program | Positions | Explanation |
| $+10,000 | -- | $240,000 | -- | Federal contribution to 1987 current expense budget of the Susquehanna River Basin Commission. |

## SUSQUEHANNA RIVER BASIN COMMISSION

### Contribution to Susquehanna River Basin Commission

For payment of the United States share of the current expenses of the Susquehanna River Basin Commission, as authorized by law (84 Stat. 1530, 1531), [$230,000] $240,000. (P. L. 99-141 making appropriations for energy and water development, 1986.)

Program and Financing (in thousands of dollars)

| Identification code 46-0501-0-1-301 | 1985 Actual | 1986 Estimate | 1987 Estimate |
|---|---|---|---|
| Program by activites: | | | |
| 10.00 Total obligations (object class 41.0).................. | 230 | 230 | 240 |
| Financing: | | | |
| 40.00 Budget Authority......... | 230 | 230 | 240 |
| Relation of obligations to outlays: | | | |
| 71.00 Obligations incurred, net..... | 230 | 230 | 240 |
| 90.00 Outlays...................... | 230 | 230 | 240 |

# DELAWARE RIVER BASIN COMMISSION
# SALARIES AND EXPENSES
# F. Y. 1987 BUDGET

## JUSTIFICATION OF PROGRAM AND PERFORMANCE

Activity: Federal Representation

The Delaware River Basin Commission was created by Compact between the Delaware River Basin States (Delaware, New Jersey, New York and the Commonwealth of Pennsylvania) and the Federal Government (P. L. 87-328) for the joint management of the Basin's water and related resources.

The Compact directs the Commission to develop and implement comprehensive plans, policies and programs relating to the water resources of the Delaware Basin; to adopt and promote uniform and coordinated policies for water conservation, utilization and development in the Basin; and to encourage the planning, development and financing of water resources projects according to such plans and policies.

The Commission's membership consists of the Governors of the signatory States and a Federal Member appointed by the President to represent all Federal interests. The Federal Member historically has been the Secretary of the Interior. Each Governor and the President are directed to appoint a Commissioner to serve as alternate to the Member, and each has identical powers of the Member, including the power to vote in his absence.

It is the responsibility of the Federal Member and the United States Commissioner to protect the national interests in the affairs and programs of the Commission. The Member and Commissioner must work closely with all interested Federal departments and agencies relative to all actions by the Commission relating to the comprehensive plan and the advisability of individual water policies, programs and projects which the Commission may either propose or consider. They serve as coordinators between the Federal agencies and the Commission to eliminate duplication and to foster complementary efforts.

An appropriation of $185,000 for F. Y. 1987 is requested to finance the salaries and expenses necessary to enable the United States Commissioner to represent the interests of the Federal Government in the workings of the Commission.

### Gramm-Rudman-Hollings Impact

As a result of the $7,000 P. L. 99-177 reduction, no temporary help will be used and printing and supply costs will be reduced.

### DELAWARE RIVER BASIN COMMISSION
### DISTRIBUTION OF BUDGET AUTHORITY BY ACCOUNT

| Appropriation: Salaries and Expenses | 1985 Actual | 1986 Enacted To date | 1986 Adjusted Approp. | 1987 Estimate |
|---|---|---|---|---|
| Enacted to date ......................... | $174,000 | $168,000 | $161,000 | $185,000 |

### SUMMARY OF INCREASES/DECREASES, 1987

| Federal Representation: | Base for 1987 | Changes | 1987 Estimate |
|---|---|---|---|
| Budget Estimate, 1987 | $168,000 | $+17,000 | $185,000 |

### ANALYSIS BY ACTIVITIES

(Direct Appropriations)

| Activity | FY 1985 Amount Available | FY 1986 Enacted To date | FY 1986 Adjusted Approp. | FY 1987 Estimate | Increase (+) or Decrease (-) 1986 Compared with 1987 |
|---|---|---|---|---|---|
| Federal representation | $174,000 | $168,000 | $161,000 | $185,000 | $+17,000 |
| Unobligated balance lapsing | 17,000 | -- | -- | -- | -- |
| Total | $157,000 | $168,000 | $161,000 | $185,000 | $+17,000 |

### JUSTIFICATION

Federal representation; Fiscal Year 1986, $168,000; Fiscal Year 1987, $185,000; increase $17,000.

| Increase (+) or Decrease (-) Amount | Increase (+) or Decrease (-) Positions | Total Program | Total Positions | Explanation |
|---|---|---|---|---|
| $+17,000 | -- | $185,000 | 2 | To continue to provide for the cost of operation of the Commissioner's office. |

## DELAWARE RIVER BASIN COMMISSION
## SALARIES AND EXPENSES

For expenses necessary to carry out the functions of the United States member of the Delaware River Basin Commission, as authorized by law (75 Stat. 716), [$168,000] $185,000. (P. L. 99-141 making appropriations for energy and water development, 1986.)

Program and Financing (in thousands of dollars)

| Identification code 46-0100-0-1-301 | 1985 Actual | 1986 Estimate | 1987 Estimate |
|---|---|---|---|
| Program by activites: | | | |
| 10.00 Total obligations............. | 157 | 168 | 185 |
| Financing: | | | |
| 25.00 Unobligated balance lapsing... | 17 | | |
| 39.00 Budget authority......... | 174 | 168 | 185 |
| 40.00 Appropriation................ | 174 | 168 | 185 |
| Relation of obligations to outlays: | | | |
| 71.00 Obligations incurred, net..... | 157 | 168 | 185 |
| 72.40 Obligated balance, start of year...................... | 22 | 16 | 16 |
| 74.40 Obligated balance, end of year | -16 | -16 | -16 |
| 77.00 Adjustments in expired accounts.................... | -7 | | |
| 90.00 Outlays, excluding pay raise supplemental................ | 155 | 168 | 185 |

Object Classification (in thousands of dollars)

| | | | |
|---|---|---|---|
| Personnel compensation: | | | |
| 11.1 Full-time permanent........... | 113 | 106 | 114 |
| 11.3 Other than full-time permanent | | 3 | 3 |
| 11.9 Total personnel compensation | 113 | 109 | 117 |
| 12.1 Personnel benefits: Civilian.. | 12 | 18 | 18 |
| 21.0 Travel and transportation of persons...................... | 9 | 9 | 9 |
| 23.1 Standard level user charges... | 12 | 11 | 12 |
| 23.3 Communications, utilities, and miscellaneous charges... | 1 | 4 | 5 |
| 24.0 Printing and reproduction..... | | 3 | 4 |
| 25.0 Other services................ | 10 | 11 | 16 |
| 26.0 Supplies and materials........ | | 3 | 4 |
| 99.9 Total obligations........... | 157 | 168 | 185 |

## DELAWARE RIVER BASIN COMMISSION
## SALARIES AND EXPENSES

Personnel Summary

| Identification code 46-0100-0-1-301 | 1985 Actual | 1986 Estimate | 1987 Estimate |
|---|---|---|---|
| Total number of full-time permanent positions ............. | 2 | 2 | 2 |
| Total compensable workyears: | | | |
| Full-time equivalent employment.. | 2 | 2 | 2 |
| Average ES salary .................. | $68,700 | $68,700 | $68,700 |
| Average GS grade ................... | 13.00 | 13.00 | 13.00 |
| Average GS salary .................. | $45,117 | $45,117 | $45,117 |

### DELAWARE RIVER BASIN COMMISSION
### SALARIES AND EXPENSES
### DETAIL OF PERMANENT POSITIONS

| | 1985 actual | 1986 estimate | 1987 estimate |
|---|---|---|---|
| Special positions at rates equal to or in excess of $68,700: | | | |
| U. S. Commissioner ............ | 1 | 1 | 1 |
| GS/GM-13 ......................... | 1 | 1 | 1 |
| Total permanent positions ..... | 2 | 2 | 2 |
| Unfilled positions, end of year | -- | -- | -- |
| Total permanent employment, end of year ...................... | 2 | 2 | 2 |

DELAWARE RIVER BASIN COMMISSION
CONTRIBUTION TO DELAWARE RIVE SIN COMMISSION
F. Y. 1987 BUD

## JUSTIFICATION OF PROGRAM AND PERFORMANCE

The Delaware River Basin Commission was created by Compact (P. L. 87-328) among the States of Delaware, New Jersey and New York, the Commonwealth of Pennsylvania and the Federal Government. The purpose of the Compact is to enable the signatory parties to participate jointly in the conservation, utilization, development and control of water and related resources of the Delaware River Basin.

Under the terms of the Compact, the Commission is directed to develop and implement comprehensive plans, policies and programs relating to the water resources of the Basin; to adopt and promote uniform and coordinated policies for water conservation, control and development in the Basin; and to encourage the planning, development and financing of water resources projects according to such plans and policies.

The principal Members of the Commission are the Governors of the signatory States, ex officio, and a Federal Member appointed by the President of the United States. The compact also provides for the appointment of a Commissioner (alternate member) by each Governor and the President who has the identical powers of the Member, including the power to vote in his absence.

Authority for United States participation in the current expense budget of the Commission is provided under Section 13.3 of the Delaware River Basin Compact (P. L. 87-328, approved September 27, 1961).

The Fiscal Year 1987 estimate requests $200,000 to cover the United States' share of the $2,110,200 current expense budget of the Delaware River Basin Commission. The reduction of $75,000 from the F. Y. 1986 appropriation is the result of taking into consideration all Federal monies going to the Commission, regardless of purpose or source—an approach long followed by the States. For instance, in F. Y. 1986 the Commission will have the following Federal funds available to it: a proposed basic contribution of $275,000; a basic water quality grant from EPA of $240,000; additional grants from EPA totalling $75,000 for DRBC's well registration program; grants totalling $300,000 from NOAA for water quality work in addition to that being conducted with the EPA grant; and $131,000 from other Federal sources to conduct work that has been requested by Federal agencies or to provide water monitoring. It is assumed most of these programs will carry over into F. Y. 1987 and be funded in part by Federal grants. In light of the magnitude of this Federal funding—$1,021,000—it is felt $200,000 is an equitable Federal fair share contribution to the Commission's F. Y. 1987 general operating budget.

### Gramm-Rudman-Hollings Impact

As a result of P. L. 99-177, the contribution to the Commission will be reduced $12,000.

The F. Y. 1987 current expense budget for the Commission totals $2,110,200--$1,800 less than the revised F. Y. 1986 current expense budget. The decrease in estimated personnel costs may necessitate a reduction from the 38 positions funded in F. Y. 1986 should it not be possible to effect savings in other object class expenditures. However, the increased cost of benefits must be met since it stems from a change in the New Jersey pension system, which covers DRBC staff. Costs will increase as the result of having to cover previously excluded part time and temporary employees.

The Delaware River Basin Compact mandates activities and provides discretionary authority for a broad range of water resources planning, design, construction and operating functions. In Fiscal Year 1987, the mandated activities will be continued, and essential discretionary planning and operating functions will be performed.

Mandated Activities:

The Compact requires (1) the preparation and maintenance of an up-to-date Comprehensive Plan, (2) the issuance of an annual Water Resources Program, (3) the review of projects having a substantial effect on the water resources of the Basin, (4) the administration of uniform and coordinated standards and procedures and (5) the publication of an annual report.

1. Comprehensive Plan: In F. Y. 1987, the Comprehensive Plan will continue to be revised to include Commission decisions flowing from the Level B Study and the "Good Faith" negotiations. This activity will require public hearings before the Commission on a series of issues. Intergovernmental coordination efforts with respect to matters impacting the Basin will continue.

2. Water Resources Program: A Water Resources Program will be prepared, subjected to public hearing, modified as appropriate, approved by the Commission and published. The Water Resources Program will include a systematic presentation of (1) the quantity and quality of water resources needs, (2) the projects* required to satisfy these needs and (3) a separate statement of the projects proposed to be undertaken by the Commission during the ensuing six years.

3. Project Review: Water, or water-related, projects proposed for implementation by any person, corporation or government authority will be reviewed for conformance with the Comprehensive Plan. These reviews, conducted in accordance with the duly issued Rules of Practice and Procedure, will result in recommended courses of action by the Commission.

4. Uniform Standards and Procedures and Their Enforcement: Uniform standards and procedures will be established for the evaluation of projects affecting the Basin and for the determination of project priorities pursuant to the requirements of the Comprehensive Plan; uniform and coordinated policies for water conservation use and management will be promoted. Appropriate enforcement action(s) will be taken where necessary to protect the provisions of the Comprehensive Plan and any standards, regulations, or docket decisions duly promulgated by the Commission.

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* "Project" is defined by the Compact as "any work, service or activity," as well as water-related facilities or additions to such facilities.

5. Annual Report: A report on the activities and finances of the Commission for the calendar year will be prepared, published and distributed to the legislative bodies of the signatory parties and the public.

Planning Activities:

Planning programs will be under way in F. Y. 1987 relating to (1) ground water, (2) water demands, (3) flood loss reduction, (4) pollution control, (5) fish, wildlife and recreation and (6) electric power.

1. Ground Water: The Basinwide ground water investigation, initiated in 1979, was completed in F. Y. 1983. Study recommendations regarding operational concepts will continue to be reviewed for inclusion within the Comprehensive Plan following public hearings. Well registrations by the Basin States will be continued, and a data management program will be instituted for the Basin.

2. Water Demands and Conservation: The basic elements of water demand projections, i.e., population, unit water uses, economic base, etc., will be compiled utilizing 1980 census data. A depletive water use budget, to be adopted in F. Y. 1986, will be fine tuned. The Commission has continuing long-term policies to reduce water use throughout the Basin through conservation efforts and to require maximum feasible efficiency in the use of water by new and existing water users. Recommendations received from the Commission's Water Conservation Advisory Committee will be considered.

3. Flood Loss Reduction: Work will continue on a comprehensive Basinwide flood loss reduction plan and be considered by the Commission for possible inclusion within its Comprehensive Plan.

4. Pollution Control: The multi-faceted pollution control program totalling $694,000 will continue in F. Y. 1987, funded in part with a proposed $240,000 grant from the Federal Environmental Protection Agency. The program will encompass the following activities in F. Y. 1987:

Use Attainability Studies. Consider the attainability of designated uses in the triennial reviews of adopted and potential new water quality standards. Where designated uses are less than the Federal goal, use attainability analyses must assess the attainability of the fishable and swimmable goals.

Allocation of Estuary Waste Assimilative Capacity. The reallocation of the assimilative capacity of Zones 2 through 5 of the Delaware River will be continued during F. Y. 1987 in close association with the U. S. Environmental Protection Agency, the States of Delaware, New Jersey and Pennsylvania, and 208 planning agencies. This activity will require mathematical model computer runs, notices of preliminary allocations, hearings on objections before hearing panels, reports to the Commission by the panels and Commission decision. This is expected to be a major pollution control activity in F. Y.'s 1986 and 1987.

Zone 2 Study. Studies initiated in F. Y. 1981 (but delayed due to funding cutbacks) leading to a plan—both engineering and financial—to solve the problems in the Delaware estuary Zone 2 caused by non-point loads will be continued in F. Y. 1987 if funds are available.

Water Quality Data Collection. The Commission will compile and make available to interested parties data on the quality of Basin surface and ground waters. The Commission will act as the cooperating agent with the U.S.G.S. for some monitors in the estuary.

Water Quality Standards. The Commission will continue to develop and adopt interstate water quality standards that are consistent with the laws of the land and the water management plan of the Basin.

Coordination. The interstate aspects of state water quality programs will be coordinated by the Commission. The reports required by P. L. 92-500, Section 305(b), will be prepared by the Commission for the interstate Delaware River.

5. Fish and Recreation: The Commission will consider including in the Delaware River Basin Commission's Comprehensive Plan the land management plan associated with the Upper Delaware Scenic and Recreation River, which is to be completed by the U. S. National Park Service in F. Y. 1986 and which involves the cooperative efforts of the Service, the Commission, the States of New York and Pennsylvania and the counties bordering the River.

Liaison and coordination with fish management agencies will continue with respect to issues pending before the Commission.

6. Electric Power: The Commission and Pennsylvania have been issued a construction license by the Federal Energy Regulatory Commission (FERC) for developing hydropower at the Blue Marsh Reservoir. An additional feasibility study of the potential of a small hydroelectric plant to use modular components and "pumps as turbines" at Blue Marsh Reservoir was completed in F. Y. 1984. Detailed design of that project will be completed in F. Y. 1985, with construction starting in F. Y. 1986 and to be completed in F. Y. 1987.

Contact will be maintained with the electric power companies to keep abreast of water demands related to the industry and modifications foreseen to their Master Siting Study.

Operating Activities:

The water sales program, adopted by the Commission pursuant to Resolution Nos. 72-4 and 74-6, will be administered. This program involves execution of contracts with major water users and the assessment of fees against minor water users under the self-administering arrangement. The legal entitlement program as it relates to municipal and industrial withdrawers of water was completed in F. Y. 1979. In F. Y. 1987, new water sales contracts will be negotiated, current contracts monitored, and self-invoicing procedures spot-checked. Field checking of water users' facilities will be carried out, as staff time permits.

Ground Water Protected Area:

Under contractual arrangements with the State of Pennsylvania, the Commission will continue to administer special regulations regarding the use of ground water in portions of Berks, Bucks, Chester, Lehigh and Montgomery Counties, Pennsylvania. These special regulations will apply to the Commission's designated "Southeastern Pennsylvania Ground Water Protected Area." In addition to meeting all current requirements of the Comprehensive Plan and Rules of Practice and Procedures, applicants seeking permission to withdraw more than 10,000 gallons per day will be required to demonstrate that the requested use would not (1) render supplies in the underground Basin unreliable, (2) cause long-term progressive lowering of water levels, (3) cause water quality degradation, (4) result in permanent loss of storage capacity nor (5) substantially impact perennial streams. Such applicants will be required to take a number of conservation measures and file a drought emergency plan with the Commission. All present users of more than 10,000 gallons per day will be required to register their wells with the Commission in order to attain the protection offered by the declaration.

## DELAWARE RIVER BASIN COMMISSION
## CURRENT EXPENSE BUDGET
## F. Y. 1987

| | Revised FY 1985 Budget | Revised FY 1986 Budget | FY 1987 Request | (+) Increase (-) Decrease |
|---|---|---|---|---|
| Revenues: | | | | |
| Signatory Parties: | | | | |
| Delaware | $ 166,800 | $ 175,300 | $ 184,000 | $+ 8,700 |
| New Jersey | 443,000 | 473,300 | 497,000 | +23,700 |
| New York | 200,000 | 263,000 | 276,000 | +13,000 |
| Pennsylvania | 511,600 | 543,500 | 571,000 | +27,500 |
| Federal Government | 283,000 | 275,000* | 200,000*** | -75,000 |
| Miscellaenous: | | | | |
| Other | 62,100 | 77,900 | 78,000 | + 100 |
| Fund Balance | 50,000 | 64,000 | 64,200 | + 200 |
| EPA Water Quality Grant | 230,000 | 240,000** | 240,000*** | -0- |
| Contingency | 65,000 | -0- | -0- | -0- |
| Total | $2,011,500 | $2,112,000 | $2,110,200 | $- 1,800 |
| Expenditure Categories: | | | | |
| Personal Services | $1,183,000 | $1,271,000 | $1,228,200 | $-42,800 |
| Special and Contractual Services | 214,000 | 215,000 | 217,000 | + 2,000 |
| Services Other Than Personal | 27,000 | 28,000 | 30,000 | + 2,000 |
| Supplies and Materials | 45,000 | 45,000 | 47,000 | + 2,000 |
| Space | 180,000 | 185,000 | 190,000 | + 5,000 |
| Communications | 50,000 | 50,000 | 53,000 | + 3,000 |
| Travel | 22,000 | 22,000 | 22,000 | -0- |
| Maintenance and Replacements | 31,000 | 33,000 | 35,000 | + 2,000 |
| Equipment Purchase or Rental | 34,500 | 26,000 | 28,000 | + 2,000 |
| Grants, Fringe Benefits and Other | 225,000 | 237,000 | 260,000 | +23,000 |
| Total | $2,011,500 | $2,112,000 | $2,110,200 | $- 1,800 |

*The 1986 adjusted contribution is $263,000.

** Does not reflect additional water quality grants of $80,000 from EPA and $300,000 from NOAA awarded to Commission in F. Y. 1986.

***Does not reflect any additional Federal monies which may be made available to the Commission in F. Y. 1987.

## DELAWARE RIVER BASIN COMMISSION
## CONTRIBUTION TO DELAWARE RIVER BASIN COMMISSION

### COMPARISON OF FUNDING

| Appropriation/Activity | Budget Authority 1985 Actual | 1986 Enacted To date | 1986 Adjusted Approp. | 1987 Estimate |
|---|---|---|---|---|
| Contribution to Delaware River Basin Commission ................. | $283,000 | $275,000 | $263,000 | $200,000 |

### SUMMARY OF INCREASES/DECREASES FOR 1987 BY ACTIVITY

| | 1987 Base | 1987 Estimate | Increase (+) or Decrease (-) |
|---|---|---|---|
| Activity: Contribution to the Commission | $275,000 | $200,000 | $-75,000 |

To provide for the 1987 Federal share of the annual expenses of the Delaware River Basin Commission.

### JUSTIFICATION

Contribution to the Commission: Fiscal year 1986, $275,000; fiscal year 1987, $200,000; decrease of $75,000.

| Increase (+) or Decrease (-) Amount | Positions | Program | Positions | Explanation |
|---|---|---|---|---|
| $-75,000 | -- | $200,000 | -- | Federal contribution to 1987 current expense budget of the Delaware River Basin Commission. |

## DELAWARE RIVER BASIN COMMISSION

### Contribution to Delaware River Basin Commission

For payment of the United States share of the current expenses of the Delaware River Basin Commission, as authorized by law (75 Stat. 706,707) [$275,000] $200,000 (P. L. 99-141 making appropriations for energy and water development, 1986.)

Program and Financing (in thousands of dollars)

| Identification code 46-0102-0-1-301 | 1985 Actual | 1986 Estimate | 1987 Estimate |
|---|---|---|---|
| Program by activites: | | | |
| 10.00 Total obligations (object class 41.0).................. | 283 | 275 | 200 |
| Financing: | | | |
| 40.00 Budget Authority......... | 283 | 275 | 200 |
| Relation of obligations to outlays: | | | |
| 71.00 Obligations incurred, net..... | 283 | 275 | 200 |
| 90.00 Outlays...................... | 283 | 275 | 200 |

Jan. 1986

# INTERSTATE COMMISSION ON THE POTOMAC RIVER BASIN
## Fiscal Year 1987 Budget Justification
(October 1, 1986-September 30, 1987)

### A. HISTORY:

The Interstate Commission on the Potomac River Basin (ICPRB) was created with the Potomac Basin Conservancy Compact of 1940 by the signatory bodies, i.e., the Commonwealths of Virginia and Pennsylvania, the States of Maryland and West Virginia, and the District of Columbia. The 1940 Compact was developed for the purpose of controlling pollution in the Potomac drainage area and the U.S. Congress approved it on July 11, 1940. The signatory bodies later ratified amendments to the Compact to broaden the Commission's coordination, investigation, and education responsibilities to include "development, utilization and conservation of the water and associated land resources" of the basin. The U.S. Congress approved the amendments with the passage of Public Law 91-407 on September 25, 1970. Members of the Commission are appointed by the Chief Executive (Governor or Mayor) of each signatory body according to provisions of its ratifying statue and by the President for the federal government.

### B. SERVICE AREA:

The service area covers the 14,700 square miles of the Potomac drainage basin in the District of Columbia and parts of Maryland, Pennsylvania, Virginia and West Virginia, including several thousand square miles of national parks and forests and other federally-owned lands.

### C. ORGANIZATION:

All ICPRB responsibilities under the Compact are vested in the Commission which is administered by the Commissioners (three plus alternates from each of the four states, the District of Columbia and the federal government) through an executive director and staff located in Rockville, Maryland. The Commissioners meet quarterly in March, June, September and December to carry out their policy direction and other responsibilities. Between quarterly meetings, this function is vested in the Executive Committee which is composed of one member from each jurisdiction and meets on the call of the Chairman.

D. WORK PROGRAM:

1. Water Supply --

Implementation of the Potomac Water Supply Coordination Agreement of July 22, 1982 for management of upper basin storage reservoirs (Bloomington Lake and Savage River Reservoir) and downstream water supply withdrawals in the Metro Washington Area through the CO-OP Section (Cooperative Water Supply Operations on the Potomac). ICPRB CO-OP has developed and will continue to refine and operate the computerized analytical programs for cooperative operations of reservoirs and withdrawals to assure water supply reliability, maintenance of streamflows to protect water quality and aquatic ecosystems, and maximization of benefits to other reservoir purposes. The cooperative operations coordinated by ICPRB CO-OP have enabled Metro Washington utilities to avoid the threat of water use restrictions such as those enforced as early as May 1985 by users of the Delaware River and other sources in PA, NJ and NY; also they have eliminated the need for additional reservoir storage in the upper Potomac basin until well after the year 2000, thus saving a minimum of an estimated $250 million as proposed in earlier plans.

2. Water Quality --

a. ICPRB's major water quality program emphasis will be to assist the states and EPA in the continuing implementation of Chesapeake Bay clean-up initiatives, coordinated by the State/EPA Executive Council (VA, PA, MD, DC and USEPA) and its Implementation Committee and Subcommittees. ICPRB's Chesapeake Bay role calls for continuation of its traditional leadership and coordination under the Potomac Basin Interstate Compact for the Potomac arm of the Bay, which is second only to the Susquehanna River as a catchment area draining to the Bay. Under current arrangements, continuation of the Potomac estuary clean-up strategy is implemented through the Potomac Strategy State/EPA Management Committee (USEPA, DC, MD, VA, ICPRB and Metro Washington Council of Governments).

ICPRB's work in cooperation with the Potomac Strategy Committee especially focuses on the determination of additional point and nonpoint source controls, if any, to meet tidewater eutrophication goals. This includes (1) determining the frequency of critical weather and flow conditions for algae blooms, (2) developing information on characteristics of specific algae species of concern, (3) calibration and verification of a predictive sediment and nutrient runoff model of the Monocacy sub-basin, a major contributor of sediment and nutrients to the river, and (4) evaluation of benefits of achieving alternative goals for reducing the frequency and intensity of the algae blooms.

b. Conduct of planning studies on sediment and nutrient transport from upper basin nonpoint sources and the effectiveness of controls for reducing nonpoint source contributions to estuary and bay pollution problems. This includes development of a conceptual sediment transport model which will allow the routing and storage of sediment to be quantified for critical river segments and sub-basins. Such a model may be the only way to provide a valid representation of sediment and associated nutrient delivery to the tidal river as a basis for cost-effectiveness estimates of possible control decisions.

c. Development of recommended water demand and supply management strategies for decreasing the severity, duration and frequency of low flows and related adverse impacts on water quality and aquatic life in the river and estuary; also for minimizing instream conflicts between water supply and water quality and for enhancing fisheries and recreational benefits below the Savage River and new Randolph (formerly named Bloomington) reservoirs in the upper basin and downstream to the Potomac tidewater. This will continue to be achieved in part through the Instream Flow Committee composed of representatives from federal and state water and fisheries agencies and chaired by ICPRB.

d. Coordination of the Potomac basin surface water quality monitoring network by means of a task force of state and federal representatives, and evaluation and reporting on pollution control progress and water quality trends throughout the five-state basin.

e. Development and refinement of technical tools, such as mathematical computer models for interpreting monitoring information and for evaluating the attainment of water quality standards and opportunities for maximizing benefits of wastewater treatment and other pollution controls, and for maintaining interstate compatibility of standards and pollution control programs.

f. Maintenance and improvement of the toxic spill model for the Potomac and major tributaries as an early warning system for water supply intakes.

g. Promotion and assistance with other major water-related projects and research to solve problems of interstate significance, as needed.

3. Public Education and Information --

Publication of 10 issues each year of the Potomac Basin Reporter, the only basin-wide current event water information periodical; organization and conduct of periodic State of the Potomac public meetings and publication of reports for the lay public; continuation of summer Potomac River Watch weekly reports about water quality and recreational opportunities for use by the news media; continuation of the news media outreach program about the basin's water resources, especially the improved water quality, recreation and other values of the Potomac and its tributaries throughout the basin; and maintenance and updating of the library of Potomac basin information materials for use by technical organizations and the public and for responding to the usual 100 or more annual requests for Potomac-related educational material and information.

E. PROPOSED FISCAL YEAR 1987 BUDGET:

Table 1 shows proposed expenditures in FY 1987 by major categories along with actual and budgeted expenditures for FY 1985 and 1986. Table 2 shows proposed member state and federal appropriations and anticipated income from other sources for FY 1987 together with actual and budgeted amounts for FY 1985 and FY 1986.

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TABLE 1

INTERSTATE COMMISSION ON THE POTOMAC RIVER BASIN
Proposed Expenditures for Fiscal Year 1987
(Including Actual and Budgeted amounts for FY 1985 & FY 1986)

| Major Expenditure Categories(1) | Actual FY 1985 ($) | Budgeted FY 1986 ($) | Proposed FY 1987 ($) |
|---|---|---|---|
| Personnel Salaries and Benefits | 543,800 | 540,000 | 570,000 |
| Rent, Office Expense, Travel, etc. | 134,800 | 124,000 | 125,000 |
| CO-OP Section Computer Equipment | 16,000 | 30,000 | 10,000 |
| Publications | 21,600 | 24,000 | 30,000 |
| Consultants & Contracts | 37,400 | 57,000 | 20,000 |
| Total Expenditures | 753,600 | 775,000 | 755,000 |
| Total Staff(2) | 14.6 | 14.8 | 15 |

(1) Includes expenditures of Section on Cooperative Water Supply Operations on the Potomac (CO-OP) organized under Article III of the Potomac Basin Compact.

(2) Includes permanent part-time employees and temporary summer technical aides.

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## TABLE 2

## INTERSTATE COMMISSION ON THE POTOMAC RIVER BASIN
Proposed Contributions and other Projected Income for Fiscal Year 1987
(Including Actual and Budgeted amounts for FY 1985 and FY 1986)

| Source* | Actual FY 1985 ($) | Budgeted FY 1986 ($) | Proposed FY 1987 ($) |
|---|---|---|---|
| Signatory States | | | |
| District of Columbia | 41,500 | 45,500 | 45,500 |
| Maryland | 61,000 | 78,600 | 78,600 |
| Pennsylvania | 20,800 | 21,400 | 21,400 |
| Virginia | 70,200 | 74,200 | 74,200 |
| West Virginia | 19,800 | 20,300 | 20,300 |
| States Subtotal | 213,300 | 240,000 | 240,000 |
| Direct U.S. Appropriation | 70,000 | 79,000 | 79,000 |
| USEPA Annual Program Grant, Sec.106 Fed.Clean Water Act | 179,900 | 160,000 | 160,000 |
| CO-OP Contribution from Water Utilities(1) | 174,900 | 176,000 | 160,000 |
| Other Sources (Spec.Proj's, Int., Pub.Sales, etc.) | 82,000 | 118,000 | 90,000 |
| Carryover from Prev. Year | 89,000 | 56,000 | 54,000 |
| TOTAL | 809,100 | 829,000 | 783,000 |

*The Congressionally approved interstate compact establishing the Commission specifies that it shall be financed 'by appropriations from the signatory bodies and the United States' with the pro rata contributions to be 'based on such factors as population, the amount of industrial and domestic pollution and a flat service charge.' The formula for state contributions includes a flat service charge of $15,000 with 3/4 of the remainder prorated by the 1980 census population in the basin and 1/4 by major industrial and municipal point source pollution. The fair share contribution of the United States has been agreed to equal the largest of the state contributions due to the impact of the National Capital and the federal lands and other interests in the basin.

(1) Washington Suburban Sanitary Commission (MD), Fairfax County Water Authority (VA), and the Dept. of Public Works (DC).

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